Appendix A

Notice of Preparation

Notice of Preparation of an Environmental Impact Report

Date: February 9, 2015

To: Responsible Agencies, Agencies with Jurisdiction by Law, Trustee Agencies, Involved Federal Agencies, and Agencies/People Requesting Notice

From:
County of Alameda
Brian Laczko, Project Manager
General Services Manager, Technical Services Division
County of Alameda
1401 Lakeshore Drive, 8th Floor
Oakland, CA 94612
Telephone: (510) 272-3753 Fax: (510) 208-3995
E-Mail: brian.laczko@acgov.org

Re: **Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Cherryland Community Center Project**

The County of Alameda (Lead Agency) will prepare an EIR for the proposed Cherryland Community Center project (Project). This Notice of Preparation (NOP) is being distributed to applicable responsible agencies, trustee agencies, and interested parties as required by the California Environmental Quality Act (CEQA). Comments from agencies and interested parties are requested as to the scope and content of the environmental review in connection with the proposed Project. The Project location and project description are summarized below.

Project Location: The Project site is located at 278 Hampton Road (APN 413-35-010), 17482 Boston Road (APN 413-35-14-03), and the Meek Estate Park parking lot (APN 413-35-19-2) in the community of Cherryland in unincorporated Alameda County. The Community Center would be constructed on two parcels totaling 56,968 square feet or approximately 1.3 acres. The total Project area including the existing parking lot is approximately 2.2 acres. Figure 1 and 2 illustrate the regional and Project site location and boundaries.

The T-shaped Community Center site is bounded on the south by two-lane Hampton Road and on the west by Boston Road. The Project would also be located on the Meek Estate Park parking lot, a separate parcel, which is located and accessed from the end of the Boston Road cul-de-sac. Residential properties are located to the east, north, and west of the Community Center parcels and to the south of the Meek Estate Park parking lot parcel.

Proposed Project: The proposed Project involves the demolition of an existing structure and concrete pads on the Project site, construction of the new 17,500 square feet Cherryland Community Center, and reconfiguration and improvements to the existing

Meek Estate Park parking lot. Alameda County has partnered with Hayward Area Recreation & Park District (HARD) to design and construct the Cherryland Community Center. The facility would be owned by Alameda County and once construction is completed, HARD would be responsible for the ongoing programming, operations, and maintenance of the Cherryland Community Center.

The Project's expressed goal is to provide a gathering place and community focal point for local residents of all ages. The facility would include a lobby/reception gathering space area, a 5,000 square feet Community Event Room with adjoining courtyard and commercial kitchen, three (3) Multiple Activity Rooms, a Satellite Library, and additional space for pre-K facilities; all surrounded by active outdoor use areas and generous plantings. The Project would provide space for a number of uses including wedding receptions, lectures, performances, speaking engagements; yoga, art and exercise classes; reading programs, library and computer/technology access; and a diverse array of educational and recreational classes.

The Cherryland Community Center would be comprised of a single-story structure with wooden trusses, glazed windows with sun-screening, and a series of canopies would provide an open and bright sensibility to the spaces. The Project would include light monitors (windows located along the roof line), a hearth in the lobby, and morning and afternoon porches to create comfortable spaces for the community. Spaces within the building would frame views to a series of courtyards with intimate seating, Bay-Friendly plantings, and non-fruiting trees in reference to the nearby Meek Estate. The Project would include site lighting, stormwater treatment features, and accommodate fire and emergency access per County code. A site plan for the building is shown in Figure 3.

Access to the Project would be provided from Boston Road and Hampton Road. On-site parking for 20 automobiles would be provided on the Hampton Road parcel. Additional off-site parking for special events would be provided in the existing, re-configured Meek Estate Park parking lot, located north of the Community Center on Boston Road. This existing parking lot would be reconfigured as part of the proposed Project to provide parking for 104 vehicles and would provide enhanced pedestrian connections to the Community Center, providing a total of 124 spaces to accommodate the Project,. Additional improvements to the parking lot include installation of storm water treatment devices, screening for adjacent residential properties, improved site lighting, and pedestrian and vehicular circulation improvements.

Estimated Project construction is scheduled to start during the summer of 2015 and be completed by the fall of 2016.

Probable Environmental Effects: Based on the project description and the Lead Agency's understanding of the environmental issues associated with the Project, the following topics will be analyzed in the EIR, including: Aesthetics, Air Quality/Greenhouse Gases, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use/Planning, Noise, Public Services and Recreation, Transportation/Traffic, and Utilities and Service Systems. No agricultural or mineral resources are located on the site and the Project would not generate an increase in population in the County; therefore, agricultural resources, mineral resources, and population and housing will be only briefly addressed in the EIR. The specific alternative evaluated in the EIR will include the "No Project" alternative as required by CEQA.

NOP Notice: The Lead Agency solicits comments regarding the scope and content of the EIR from all interested parties requesting notice, responsible agencies, agencies with jurisdiction by law, trustee agencies, and involved agencies.

Comments should focus on discussion of possible impacts on the physical environment, ways in which potential adverse effects might be minimized, and alternatives to the Project in light of the EIR's purpose to provide useful and accurate information about such factors. In addition, comments may be provided at the meeting indicated below.

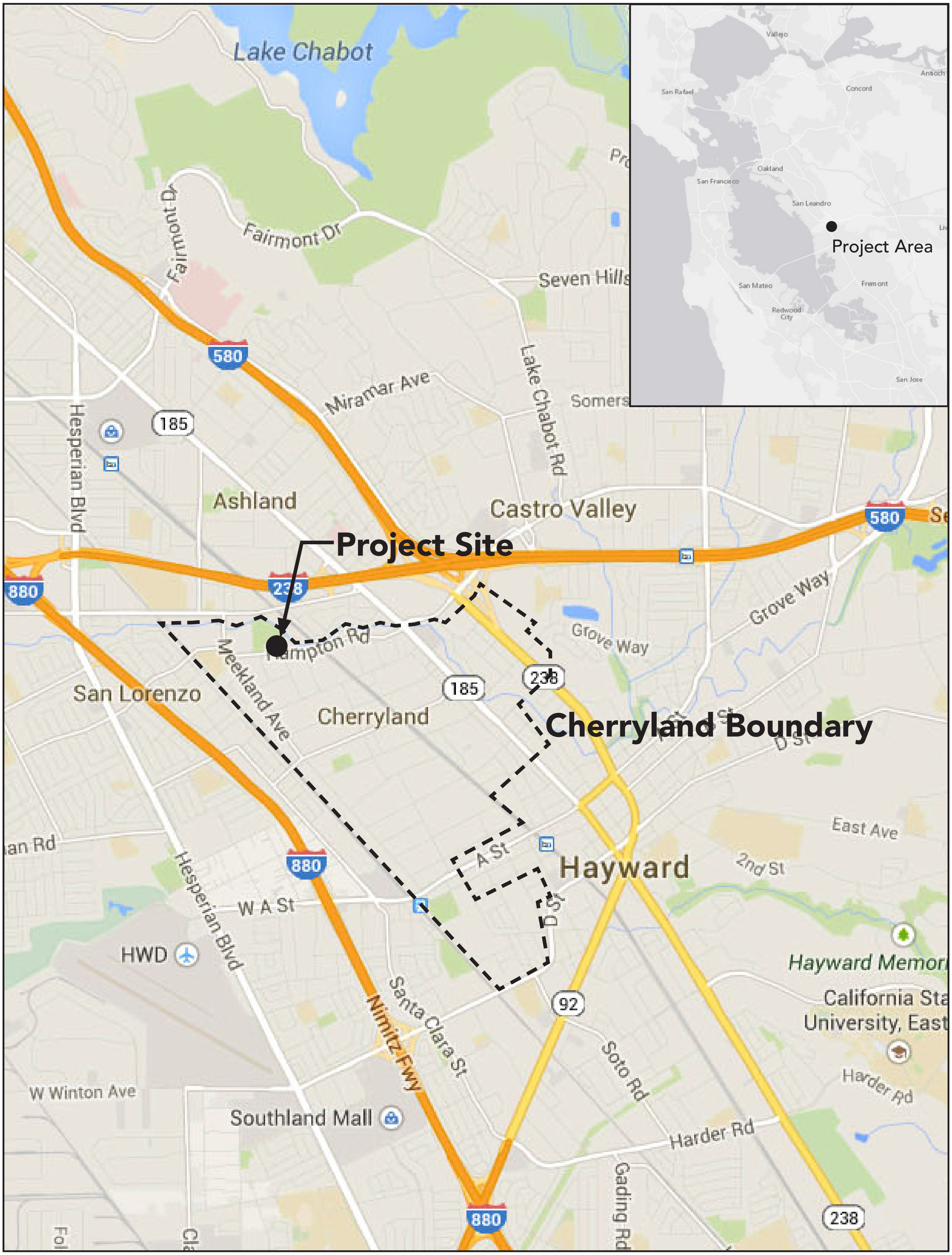
CEQA sets the review and comment period for an NOP to end 30 days after publication. The County therefore requests comments on this NOP be received no later than the close of business on March 11th, 2015. Send written comments to:

County of Alameda
Brian Laczko, Project Manager
General Services Manager, Technical Services Division
County of Alameda
1401 Lakeshore Drive, 8th Floor
Oakland, CA 94612
Telephone: (510) 272-3753 Fax: (510) 208-3995
E-Mail: brian.laczko@acgov.org

NOP Scoping Meeting: An NOP Scoping meeting will be held for the Project on Tuesday, February 24th, 2015 from 6:30-7:30 p.m. The meeting will be held at the Eden United Church of Christ, located at 21455 Birch Street, Hayward, CA, 94541.

ALL INTERESTED PARTIES ARE INVITED TO SUBMIT WRITTEN COMMENTS ON THE SCOPE OF THE EIR TO ASSIST IN IDENTIFYING ISSUES TO BE ADDRESSED IN THE EIR.

X ______________________ Date: 2/6/15
Brian Laczko, Project Manager



MIG Cherryland Community Center
Cherryland, CA

Figure 1
Regional and Project Location

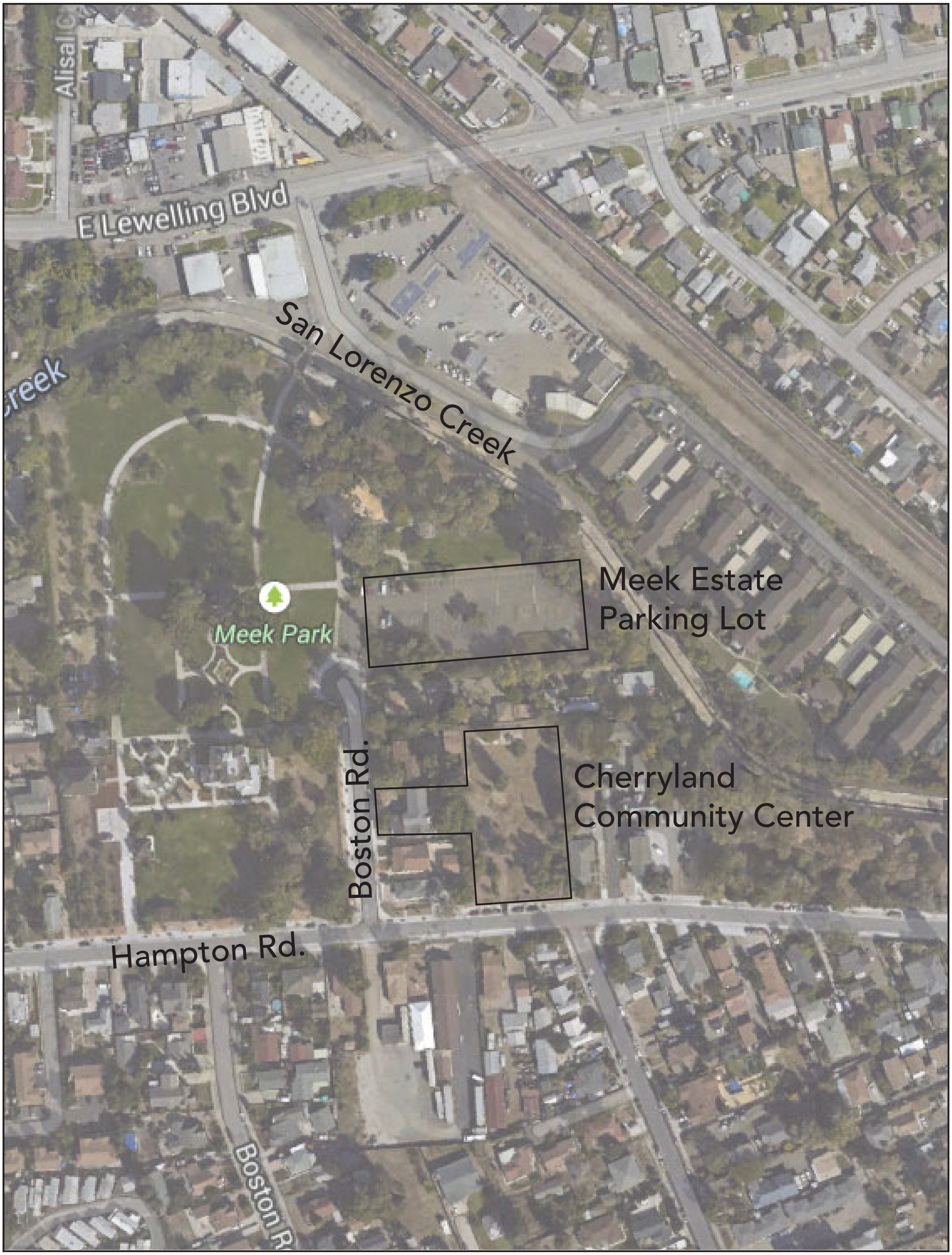
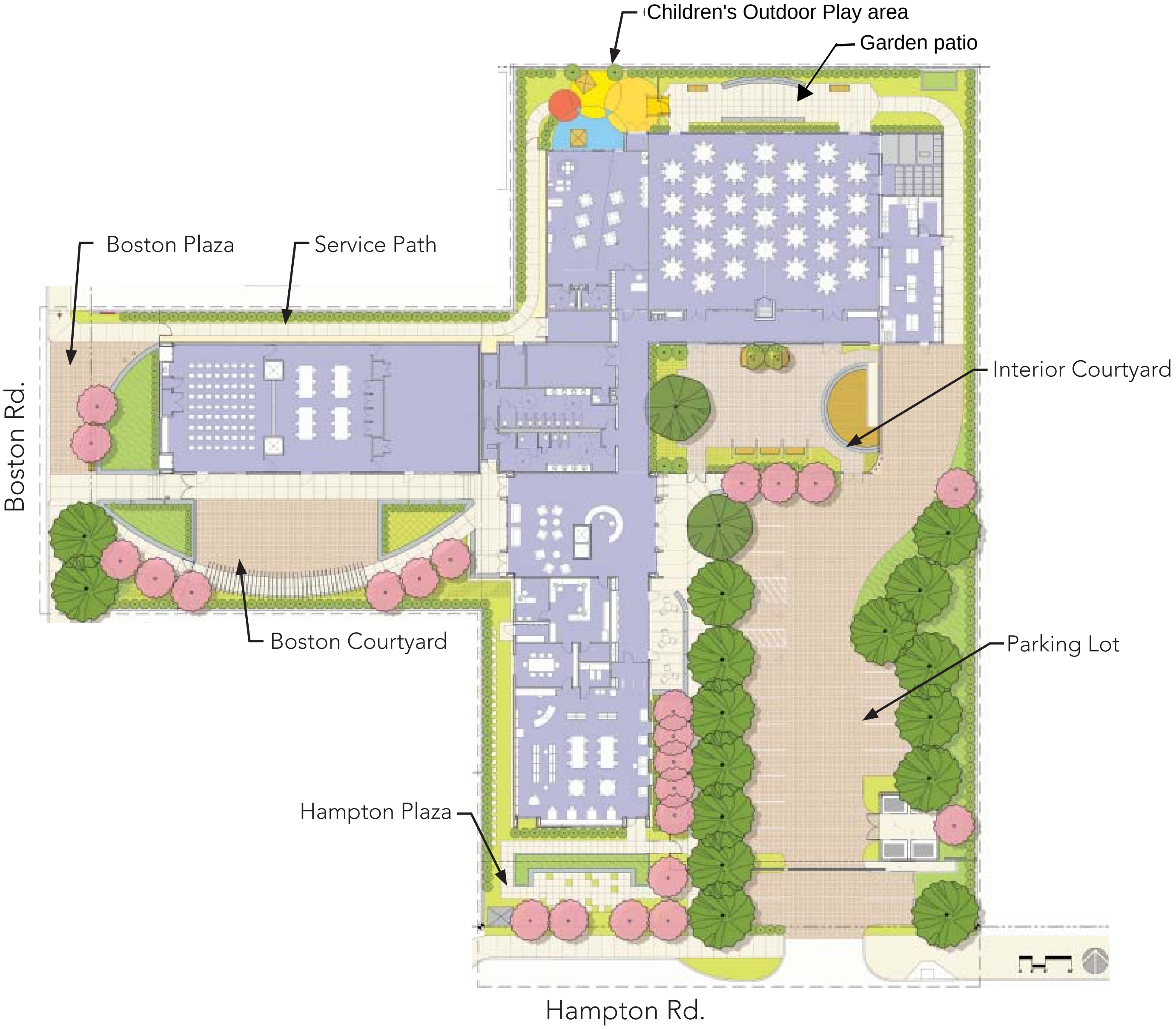


Figure 2
Project Site



MIG

Cherryland Community Center
Cherryland, CA

Figure 3
Site Plan

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

Notice of Preparation

RECEIVED
COUNTY OF ALAMEDA
FEB 18 2015
GSA - TECHNICAL SERVICES DEPARTMENT
DESIGN AND CONSTRUCTION

February 9, 2015

To: Reviewing Agencies

Re: Cherryland Community Center
SCH# 2015022038

Attached for your review and comment is the Notice of Preparation (NOP) for the Cherryland Community Center draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Brian Laczko
Alameda County
1401 Lakeshore Drive, 8th Floor
Oakland, CA 94612

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# **2015022038**
Project Title Cherryland Community Center
Lead Agency Alameda County

Type **NOP** Notice of Preparation

Description The proposed project involves the demolition of an existing structure and concrete pads on the project site, construction of the new 17,500 sf Cherryland Community Center, and the reconfiguration of the existing Meek Estate Park parking lot.

Lead Agency Contact

Name Brian Laczko
Agency Alameda County
Phone (510) 272-3753 ***Fax***
email
Address 1401 Lakeshore Drive, 8th Floor
City Oakland ***State*** CA ***Zip*** 94612

Project Location

County Alameda
City Hayward
Region
Cross Streets Boston Road/Hampton Road
Lat / Long 37° 41' 03" N / 122° 06' 44" W
Parcel No. 413-35-010, -14-03, and -19-2
Township ***Range*** ***Section*** ***Base***

Proximity to:

Highways I-580, I-880, I-238
Airports
Railways BART, UPPR
Waterways San Lorenzo Creek
Schools
Land Use Low-Medium Density Residential (LMDR), Parks (P)/Suburban Residential - Secondary Unit (RS-SU)

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Growth Inducing; Landuse; Cumulative Effects

---

Reviewing Agencies Resources Agency; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Wildlife, Region 3; Native American Heritage Commission; California Highway Patrol; Caltrans, District 4; Air Resources Board; Regional Water Quality Control Board, Region 2

Date Received 02/09/2015 ***Start of Review*** 02/09/2015 ***End of Review*** 03/10/2015

Note: Blanks in data fields result from insufficient information provided by lead agency.

NOP Distribution List County: Alameda SCH# 2015022038

Resources Agency

☒ **Resources Agency**
Nadell Gayou

☐ **Dept. of Boating & Waterways**
Nicole Wong

☐ **California Coastal Commission**
Elizabeth A. Fuchs

☐ **Colorado River Board**
Lisa Johansen

☐ **Dept. of Conservation**
Elizabeth Carpenter

☐ **California Energy Commission**
Eric Knight

☐ **Cal Fire**
Dan Foster

☐ **Central Valley Flood Protection Board**
James Herota

☐ **Office of Historic Preservation**
Ron Parsons

☒ **Dept of Parks & Recreation**
Environmental Stewardship Section

☐ **California Department of Resources, Recycling & Recovery**
Sue O'Leary

☐ **S.F. Bay Conservation & Dev't. Comm.**
Steve McAdam

☒ **Dept. of Water Resources**
Resources Agency
Nadell Gayou

Fish and Game

☐ **Depart. of Fish & Wildlife**
Scott Flint
Environmental Services Division

☐ **Fish & Wildlife Region 1**
Donald Koch

☐ **Fish & Wildlife Region 1E**
Laurie Harnsberger

☐ **Fish & Wildlife Region 2**
Jeff Drongesen

☒ **Fish & Wildlife Region 3**
Charles Armor

☐ **Fish & Wildlife Region 4**
Julie Vance

☐ **Fish & Wildlife Region 5**
Leslie Newton-Reed
Habitat Conservation Program

☐ **Fish & Wildlife Region 6**
Tiffany Ellis
Habitat Conservation Program

☐ **Fish & Wildlife Region 6 I/M**
Heidi Sickler
Inyo/Mono, Habitat Conservation Program

☐ **Dept. of Fish & Wildlife M**
George Isaac
Marine Region

Other Departments

☐ **Food & Agriculture**
Sandra Schubert
Dept. of Food and Agriculture

☐ **Depart. of General Services**
Public School Construction

☐ **Dept. of General Services**
Anna Garbeff
Environmental Services Section

☐ **Delta Stewardship Council**
Kevan Samsam

☐ **Housing & Comm. Dev.**
CEQA Coordinator
Housing Policy Division

Independent Commissions,Boards

☐ **Delta Protection Commission**
Michael Machado

☐ **OES (Office of Emergency Services)**
Dennis Castrillo

☒ **Native American Heritage Comm.**
Debbie Treadway

☐ **Public Utilities Commission**
Leo Wong

☐ **Santa Monica Bay Restoration**
Guangyu Wang

☐ **State Lands Commission**
Jennifer Deleong

☐ **Tahoe Regional Planning Agency (TRPA)**
Cherry Jacques

Cal State Transportation Agency CalSTA

☐ **Caltrans - Division of Aeronautics**
Philip Crimmins

☐ **Caltrans – Planning HQ LD-IGR**
Terri Pencovic

☒ **California Highway Patrol**
Suzann Ikeuchi
Office of Special Projects

Dept. of Transportation

☐ **Caltrans, District 1**
Rex Jackman

☐ **Caltrans, District 2**
Marcelino Gonzalez

☐ **Caltrans, District 3**
Eric Federicks – South
Susan Zanchi - North

☒ **Caltrans, District 4**
Erik Alm

☐ **Caltrans, District 5**
Larry Newland

☐ **Caltrans, District 6**
Michael Navarro

☐ **Caltrans, District 7**
Dianna Watson

☐ **Caltrans, District 8**
Mark Roberts

☐ **Caltrans, District 9**
Gayle Rosander

☐ **Caltrans, District 10**
Tom Dumas

☐ **Caltrans, District 11**
Jacob Armstrong

☐ **Caltrans, District 12**
Maureen El Harake

Cal EPA

Air Resources Board

☒ All Other Projects
Cathi Slaminski

☐ Transportation Projects
Nesamani Kalandiyur

☐ Industrial/Energy Projects
Mike Tollstrup

☐ **State Water Resources Control Board**
Regional Programs Unit
Division of Financial Assistance

☐ **State Water Resources Control Board**
Jeffery Werth
Division of Drinking Water

☐ **State Water Resources Control Board**
Student Intern, 401 Water Quality Certification Unit
Division of Water Quality

☐ **State Water Resouces Control Board**
Phil Crader
Division of Water Rights

☐ **Dept. of Toxic Substances Control**
CEQA Tracking Center

☐ **Department of Pesticide Regulation**
CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

☐ **RWQCB 1**
Cathleen Hudson
North Coast Region (1)

☒ **RWQCB 2**
Environmental Document Coordinator
San Francisco Bay Region (2)

☐ **RWQCB 3**
Central Coast Region (3)

☐ **RWQCB 4**
Teresa Rodgers
Los Angeles Region (4)

☐ **RWQCB 5S**
Central Valley Region (5)

☐ **RWQCB 5F**
Central Valley Region (5)
Fresno Branch Office

☐ **RWQCB 5R**
Central Valley Region (5)
Redding Branch Office

☐ **RWQCB 6**
Lahontan Region (6)

☐ **RWQCB 6V**
Lahontan Region (6)
Victorville Branch Office

☐ **RWQCB 7**
Colorado River Basin Region (7)

☐ **RWQCB 8**
Santa Ana Region (8)

☐ **RWQCB 9**
San Diego Region (9)

☐ **Other** ____________
____
____

☐ ____________
Conservancy

Last Updated 10/13/2014

Appendix B

Arborist Report

The Professional Tree Care Company
A Division of Arboricultural Specialties, Inc.

Arborist Report

Site:

Cherryland Community Center

Prepared for:

Brian Laczko

Prepared by:

Ruben Vargas

Certified Arborist #8240

11/1/13

TABLE OF CONTENTS

11/1/13

Brian Laczko
County of Alameda
1400 Lakeside Dr #800
Oakland, CA 94612

Brian

I prepared the following Arborist report for Cherryland Community Center at Boston Road & Hampton Rd, Hayward, CA. I collected my data from the site 9/26/2013 and 10/28/13.. For the purposes of this report, I assessed only trees above 9 inches in diameter.

The method I used to collect the data for this report was as follows:

- Inspected each tree listed
- Numerically assessed the condition on a scale from 1 (poor) to 5 (excellent)
- Recorded a detailed assessment
- Affixed a numerically sequenced tag to each tree
- Located each tree by number

PROPERTY OVERVIEW

I was asked to assess the trees at Cherryland Community Center for proposed construction. I assessed 26 trees. The species of trees on site include California pepper, Plums, Privet, Birch, Acacia, Cypress and citrus and fruit. Trees #1 and #2 are located adjacent to proposed building sites A, B and C. If this open area is not subject to any construction activity, the trees in this area should be protected (protection guidelines attached) and their health monitored by a certified arborist during and after construction is completed. Trees #3 and #4 are recommended for removal due to decay and poor health. The balance of trees fall within the footprint of the construction site and should be removed.

Ruben Vargas H.

Ruben Vargas
Arboricultural Specialties, Inc.
Certified Arborist #8240

ASSESSMENT CRITERIA

For summary purposes, I've assessed the condition of each tree on a scale from 1 (poor) to 5 (excellent). In addition, I've provided a detailed assessment based on the following criteria:

- **Species:** Each species of tree has certain unique characteristics. Their growth patterns and physical attributes are significant components of their condition. In addition, certain species may be more susceptible to disease, insect infestation and structural problems.

- **Structure:** The structure of a tree is often the most important aspect of a tree's condition in regards to people and buildings. Poor structure can cause limb breakage and tree failure.

- **Diseases and Insects:** Different types of fungus, bacteria and insects are in continuous interaction with trees. Not all are bad; however they do play an important role in determining a trees condition.

- **Maturity:** Trees which have reached maturity are more susceptible to disease, insect infestation, and root damage from construction or other activity. They are more likely to have structures that have potential risk to people or buildings.

TREE CONDITION OVERVIEW

The following is a summary of all **26** trees on the property and their condition:

- **9** trees are in **good to excellent** condition (requiring little, if any service)
- **4** trees are in **medium** condition (requiring some service)
- **13** trees are in **poor** condition (should be serviced, removed, or replaced)

The average condition of trees on the property is **2.7** on a scale of **1 - 5**.

TREES IN POOR CONDITION

The following **13** trees are assessed to be in poor condition and will need the most immediate attention.

TreeNumber	Species	ServiceRecommendation	Condition
4	Purple Leaf Plum	Remove	1
5	Apricot	Remove	1
7	Glossy Leaf Privit	Remove	1
8	Glossy Leaf Privit	Remove	1
10	Glossy Leaf Privit	Remove	1
6	Glossy Leaf Privit	Remove	2
12	Cherry Plum	Remove	2
13	Cherry Plum	Remove	2
14	Glossy Leaf Privit	Remove	2
15	Lemon	Remove	2
16	Glossy Leaf Privit	Remove	2
24	Leyland Cypress	Remove	2
25	Leyland Cypress	Remove	2

TREES IN MEDIUM CONDITION

The following **4** trees are assessed to be in medium condition and will need some attention.

TreeNumber	Species	ServiceRecommendation	Condition
11	Apple	Remove	3
19	Lemon	Remove	3
20	Citrus	Remove	3
21	Blackwood Acacia	Remove	3

TREES IN GOOD TO EXCELLENT CONDITION

The following **9** trees are assessed to be in good to excellent condition and may or may not need any attention.

TreeNumber	Species	ServiceRecommendation	Condition
1	California Pepper	Service	4
2	California Pepper	Service	4
3	Glossy Leaf Privit	Remove	4
9	Blackwood Acacia	Remove	4
17	Silver Birch	Remove	4
18	Silver Birch	Remove	4
22	Avocado	Remove	4
23	California Pepper	Remove	4
26	Aristocrat Pear	Remove	4

TREES RECOMMENDED FOR REMOVAL

The following **24** trees are considered hazardous, diseased, detrimental to the health of other trees, or should otherwise be removed.

# 3	Glossy Leaf Privit	Remove	4

Removal is necessary due to decay and weak attachment.

# 4	Purple Leaf Plum	Remove	1

Removal is necessary due to poor health.

# 5	Apricot	Remove	1

Removal is necessary due to the trees location within the footprint of proposed construction.

# 6	Glossy Leaf Privit	Remove	2

Removal is necessary due to the trees location within the footprint of proposed construction.

# 7	Glossy Leaf Privit	Remove	1

Removal is necessary due to the trees location within the footprint of proposed construction.

# 8	Glossy Leaf Privit	Remove	1

Removal is necessary due to the trees location within the footprint of proposed construction.

# 9	Blackwood Acacia	Remove	4

Removal is necessary due to the trees location within the footprint of proposed construction.

10 Glossy Leaf Privit Remove 1

Removal is necessary due to the trees location within the footprint of proposed construction.

11 Apple Remove 3

Removal is necessary due to the trees location within the footprint of proposed construction.

12 Cherry Plum Remove 2

Removal is necessary due to the trees location within the footprint of proposed construction..

13 Cherry Plum Remove 2

Removal is necessary due to the trees location within the footprint of proposed construction.

14 Glossy Leaf Privit Remove 2

Removal is necessary due to the trees location within the footprint of proposed construction.

15 Lemon Remove 2

Removal is necessary due to the trees location within the footprint of proposed construction.

16 Glossy Leaf Privit Remove 2

Removal is necessary due to the trees location within the footprint of proposed construction.

17 Silver Birch Remove 4

Removal is necessary due to the trees location within the footprint of proposed construction.

# 18	Silver Birch	Remove	4

Removal is necessary due to the trees location within the footprint of proposed construction.

# 19	Lemon	Remove	3

Removal is necessary due to the trees location within the footprint of proposed construction.

# 20	Citrus	Remove	3

Removal is necessary due to the trees location within the footprint of proposed construction.

# 21	Blackwood Acacia	Remove	3

Removal is necessary due to the trees location within the footprint of proposed construction.

# 22	Avocado	Remove	4

Removal is necessary due to the trees location within the footprint of proposed construction.

# 23	California Pepper	Remove	4

Removal is necessary due to the trees location within the footprint of proposed construction.

# 24	Leyland Cypress	Remove	2

Removal is necessary due to the trees location within the footprint of proposed construction.

# 25	Leyland Cypress	Remove	2

Removal is necessary due to the trees location within the footprint of proposed construction.

26 Aristocrat Pear Remove 4

Removal is necessary due to the trees location within the footprint of proposed construction.

SUMMATION

In conclusion, trees within the footprint of the proposed buildings should be removed while trees adjacent to the construction site should be protected and monitored by a certified arborist. Follow up site visits and tree maintenance should be completed annually upon completion of construction.

TREE PROTECTION - CONSTRUCTION GUIDELINES

- Tree protection fencing must be installed before any construction activity begins.
- Tree protection fencing will be installed, removed and repaired by on site Arborist only.
- Heavy equipment may not be operated within the 'drip line' of any tree.
- Injury to the trunks of the trees must be documented and repaired immediately.
- When tree roots are cut by necessity, roots 1" in diameter and greater must be sawcut and treated.
- Fill soil must be kept from under the 'drip line' of all trees.
- No storage or dumping of tools and building materials may exist within the drip line of any tree.
- No material of any kind may be stored within drip line of any tree.
- Original grade must be left undisturbed within the drip line of any tree.
- Only minor unauthorized pruning (pruning cuts under 1" in diameter) may be performed by contractors.
- Nothing may be tied around trees to act as an anchor, fulcrum, or any other function except demarcation of space with appropriate string.
- Any exposed roots must be covered with a mulch material.

*The term 'drip line' refers to the ground located directly below the outer edge of the canopy of the tree. In many cases the root system of a tree will go far beyond the 'drip line' suggesting that care should be taken when working in proximity, as well as underneath the 'drip line' of a tree.

California Pepper *Schinus molle*

Diameter	***Height***	***Spread***
115 inches	**30 feet**	**35 feet**

 # 1

Condition
✻✻✻✻
Recommend:
Service

Foliage

This tree has average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a co-dominant leader branching structure.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has no basal decay. Cavities on one of two main leaders 4-5' from ground level

Observations

The tree is leaning

Recommended Service

Recommend thinning of overall canopy, removal of dead branches, and endweight removal.

California Pepper *Schinus molle*

 # 2

Condition
*** * * ***
Recommend:
Service

Diameter	***Height***	***Spread***
37 inches	**25 feet**	**30 feet**

Foliage

This tree has average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a single dominant leader branching structure.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has no basal decay. Cavity approximately 4' from ground level (large branch was removed and tree is not healing properly)

Observations

The tree is leaning toward the neighboring property. Black weed control plastic is within the drip line.

Recommended Service

Recommend thinning of overall canopy, removal of dead branches, and endweight removal. Prune for safety by performing structural pruning. Remove plastic.

Glossy Leaf Privit *Ligustrum lucidum*

Diameter	*Height*	*Spread*
15 inches	**20 feet**	**15 feet**

 # 3

Condition
✱✱✱✱
Recommend:
Remove

Foliage

This tree has average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a co-dominant leader branching structure.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has some basal decay. There are signs of early-stage decay ata the co-dominant junction.

Observations

Recommended Service

This tree should be removed. Removal is necessary due to decay and weak attachment.

Purple Leaf Plum *Prunus cerasifera*

Diameter	***Height***	***Spread***
25 inches	**20 feet**	**20 feet**

**4**

Condition
*
Recommend:
Remove

Foliage

This tree has below average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a co-dominant leader branching structure.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has some basal decay. There is a cavity.

Observations

Recommended Service

This tree should be removed. Removal is necessary due to poor health.

Apricot

Prunus Armeniaca

Diameter	***Height***	***Spread***
26 inches	**20 feet**	**20 feet**

 # 5

Condition
*

Recommend:
Remove

Foliage

This tree has below average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a co-dominant leader branching structure. This tree has major branch failure.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has no basal decay.

Observations

The tree is located next to a concrete slab.

Recommended Service

This tree should be removed. Removal is necessary due to the trees location within the footprint of proposed construction.

Glossy Leaf Privit *Ligustrum lucidum*

Diameter	Height	Spread
14 inches	**25 feet**	**15 feet**

**#	6**

Condition
✻✻
Recommend:
Remove

Foliage

This tree has average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a co-dominant leader branching structure.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has no basal decay.

Observations

The tree is located next to a concrete slab. Black weed control plastic is within the drip line.

Recommended Service

This tree should be removed. Removal is necessary due to the trees location within the footprint of proposed construction.

Glossy Leaf Privit *Ligustrum lucidum*

Diameter	***Height***	***Spread***
44 inches	**25 feet**	**10 feet**

 # 7

Condition
*****
Recommend:
Remove

Foliage

This tree has average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a co-dominant leader branching structure. Weak co-dominant attachment

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has no basal decay.

Observations

The tree is located next to a concrete slab. Black weed control plastic is within the drip line.

Recommended Service

This tree should be removed. Removal is necessary due to the trees location within the footprint of proposed construction.

Glossy Leaf Privit *Ligustrum lucidum*

Diameter	*Height*	*Spread*
23 inches	**25 feet**	**15 feet**

**8**
Condition
*****
Recommend:
Remove

Foliage

This tree has average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a co-dominant leader branching structure. This is a weak attachment.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has no basal decay.

Observations

The tree is located next to a concrete slab. Black weed control plastic is within the drip line.

Recommended Service

This tree should be removed. Removal is necessary due to the trees location within the footprint of proposed construction.

Blackwood Acacia *Acacia melanoxylon,*

Diameter	***Height***	***Spread***
20 inches	**45 feet**	**30 feet**

 # 9

Condition
✻✻✻✻
Recommend:
Remove

Foliage

This tree has average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a single dominant leader branching structure. Trunk splits into 2 co-dominant leaders approximately 10' from the ground.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has no basal decay.

Observations

Recommended Service

This tree should be removed. Removal is necessary due to the trees location within the footprint of proposed construction.

Glossy Leaf Privit *Ligustrum lucidum*

Diameter	*Height*	*Spread*
32 inches	**25 feet**	**20 feet**

 # 10

Condition
*
Recommend:
Remove

Foliage

This tree has average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a co-dominant leader branching structure. This is a weak co-dominant attachment.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has no basal decay. Multi-trunked

Observations

Recommended Service

This tree should be removed. Removal is necessary due to the trees location within the footprint of proposed construction.

Apple

Apple

Diameter	*Height*	*Spread*
10 inches	**15 feet**	**15 feet**

 # 11

Condition
✻ ✻ ✻
Recommend:
Remove

Foliage

This tree has average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a single dominant leader branching structure.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has no basal decay.

Observations

The tree is surrounded by ivy.

Recommended Service

This tree should be removed. Removal is necessary due to the trees location within the footprint of proposed construction.

Cherry Plum

Prunus cerasifera

Diameter	*Height*	*Spread*
12 inches	**15 feet**	**15 feet**

 # 12

Condition
✻✻

Recommend:
Remove

Foliage

This tree has average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a co-dominant leader branching structure. Tthis is a weak attachment.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has no basal decay. The tree base is surrounded by ivy.

Observations

Recommended Service

This tree should be removed. Removal is necessary due to the trees location within the footprint of proposed construction..

Cherry Plum

Prunus cerasifera

Diameter	*Height*	*Spread*
9 inches	**15 feet**	**20 feet**

 # 13

Condition
*** ***
Recommend:
Remove

Foliage

This tree has average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a single dominant leader branching structure.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has no basal decay. The base is surrounded by ivy.

Observations

Recommended Service

This tree should be removed. Removal is necessary due to the trees location within the footprint of proposed construction.

Glossy Leaf Privit *Ligustrum lucidum*

Diameter	*Height*	*Spread*
12 inches	**25 feet**	**20 feet**

 # 14

Condition
*** ***
Recommend:
Remove

Foliage

This tree has average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a co-dominant leader branching structure.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has no basal decay. Ivy and vine starting to grow on main trunk.

Observations

Recommended Service

This tree should be removed. Removal is necessary due to the trees location within the footprint of proposed construction.

Lemon

Citrus Limon

Diameter	*Height*	*Spread*
9 inches	**12 feet**	**10 feet**

 # 15

Condition
*** ***
Recommend:
Remove

Foliage

This tree has below average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a single dominant leader branching structure. there is major die-back.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has no basal decay.

Observations

Recommended Service

This tree should be removed. Removal is necessary due to the trees location within the footprint of proposed construction.

Glossy Leaf Privit *Ligustrum lucidum*

Diameter	***Height***	***Spread***
9 inches	**20 feet**	**20 feet**

 # 16

Condition
*** ***

Recommend:
Remove

Foliage

This tree has average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a single dominant leader branching structure. The main trunk splits in two weakly attached co-dominant leaders approximately 4' from the ground.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has no basal decay.

Observations

Recommended Service

This tree should be removed. Removal is necessary due to the trees location within the footprint of proposed construction.

Silver Birch

Betula Pendula

Diameter	***Height***	***Spread***
11 inches	**35 feet**	**20 feet**

 # 17

Condition
✱✱✱✱
Recommend:
Remove

Foliage

This tree has average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a single dominant leader branching structure.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has no basal decay. The base is surrounded with ivy.

Observations

Recommended Service

This tree should be removed. Removal is necessary due to the trees location within the footprint of proposed construction.

Silver Birch

Betula Pendula

Diameter	***Height***	***Spread***
22 inches	**35 feet**	**25 feet**

 # 18

Condition
****
Recommend:
Remove

Foliage

This tree has average foliage. It shows no signs of disease or insect infestation.

Structure

This tree has a single dominant leader branching structure.

Treebase

This tree shows no signs of mechanical damage, has good root flare, and has no basal decay.

Observations

Recommended Service

This tree should be removed. Removal is necessary due to the trees location within the footprint of proposed construction.

NOTES

ALL DISTANCES AND DIMENSIONS ARE IN FEET AND DECIMALS OF A FOOT.

UNDERGROUND UTILITY LOCATION IS BASED ON SURFACE EVIDENCE.

BUILDING FOOTPRINTS ARE SHOWN AT GROUND LEVEL.

FINISH FLOOR ELEVATIONS ARE TAKEN AT DOOR THRESHOLD (EXTERIOR)

BENCHMARK

ALAMEDA COUNTY DISC STAMPED
MEE–ALD 1978 3'± E/O WESTERLY CURB
RETURN @ NORTHWEST CORNER OF
MEEKLAND AVENUE AND ALDEN ROAD
ELEVATION= 47.63'
(NAVD 29 DATUM)

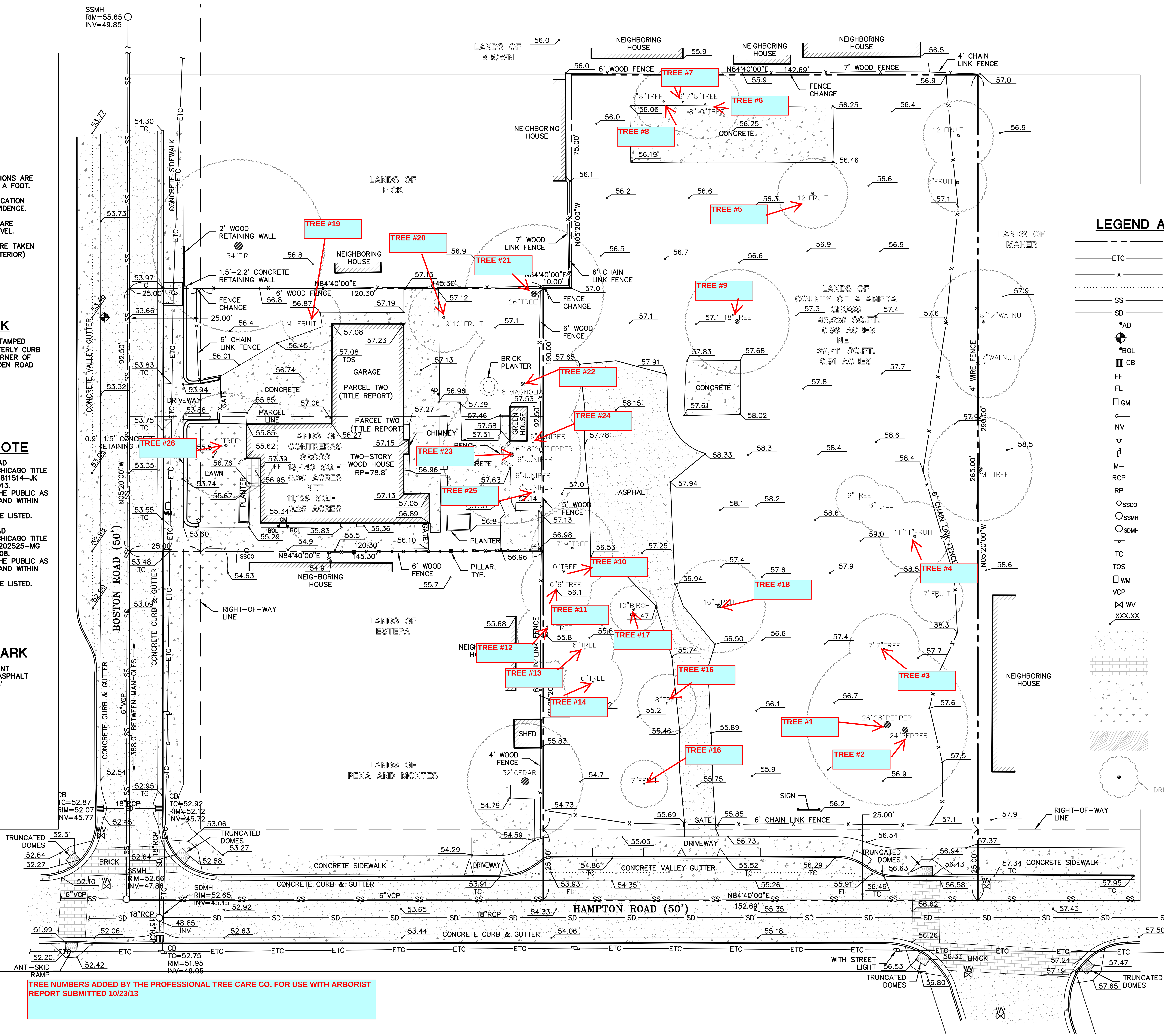
EASEMENT NOTE

17482 BOSTON ROAD
TITLE REPORT PREPARED BY CHICAGO TITLE COMPANY, TITLE NO. 13–58811514–JK
DATED APRIL 19, 2013.
EXCEPTION #3 – RIGHTS TO THE PUBLIC AS TO ANY PORTION OF THE LAND WITHIN BOSTON ROAD.
NO OTHER EASEMENTS ARE LISTED.

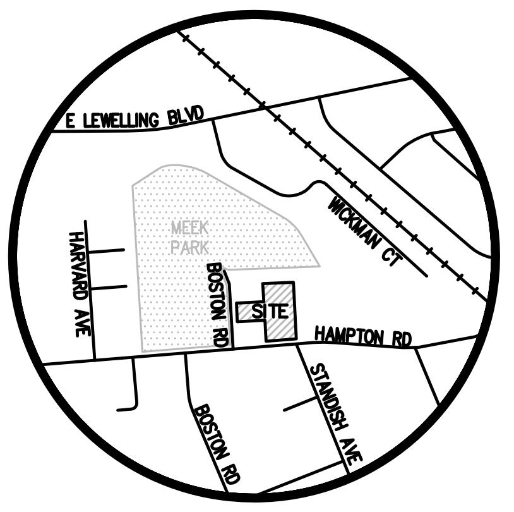
278 HAMPTON ROAD
TITLE REPORT PREPARED BY CHICAGO TITLE COMPANY, TITLE NO. 08–58202525–MG
DATED JULY 25, 2008.
EXCEPTION #3 – RIGHTS TO THE PUBLIC AS TO ANY PORTION OF THE LAND WITHIN HAMPTON ROAD.
NO OTHER EASEMENTS ARE LISTED.

⊕ SITE BENCHMARK

SURVEY CONTROL POINT
MAG AND SHINER SET IN ASPHALT
ELEVATION = 53.53'
(NAVD 29 DATUM)



TREE NUMBERS ADDED BY THE PROFESSIONAL TREE CARE CO. FOR USE WITH ARBORIST REPORT SUBMITTED 10/23/13



VICINITY MAP

NO SCALE

LEGEND AND NOTES

——— – – ———	BOUNDARY LINE
——ETC——	ELECTRICAL/TELEPHONE/ CABLE TV OVERHEAD LINE
—— x ——	FENCE LINE
···············	FLOW LINE
—— SS ——	SANITARY SEWER LINE
—— SD ——	STORM DRAIN LINE
•AD	AREA DRAIN
⊕	BENCHMARK
•BOL	BOLLARD
▥ CB	CATCH BASIN
FF	FINISH FLOOR
FL	FLOW LINE
▯ GM	GAS METER
⟜	GUY ANCHOR
INV	INVERT
☼	LIGHTING FIXTURE
∂	JOINT POLE
M–	MULTI–TRUNK TREE
RCP	REINFORCED CONCRETE PIPE
RP	ROOF PEAK
○ SSCO	SANITARY SEWER CLEAN–OUT
○ SSMH	SANITARY SEWER MANHOLE
○ SDMH	STORM DRAIN MANHOLE
—o—	STREET SIGN
TC	TOP OF CURB
TOS	TOP OF SLAB
▯ WM	WATER METER
VCP	VITRIFIED CLAY PIPE
⋈ WV	WATER VALVE
XXX.XX	SPOTGRADE
░	ASPHALT
▦	BRICK
░	CONCRETE
⌄ ⌄ ⌄	LAWN
▨	WOOD
● DRIPLINE	TREE: TYPE AND SIZE AS NOTED

JAMES TOBY
No. 8102
Exp. 12-31-14
ORIGINAL SIGNATURES IN BLUE INK

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS · LAND SURVEYORS

BAY AREA REGION
2495 INDUSTRIAL PKWY WEST
HAYWARD, CALIFORNIA 94545
(P) (510) 887–4086
(F) (510) 887–3019

SACRAMENTO REGION
3017 DOUGLAS BLVD, # 300
ROSEVILLE, CA 95661
(P) (916)966–1338
(F) (916)797–7363

WWW.LEABRAZE.COM

17482 BOSTON ROAD
278 HAMPTON ROAD
HAYWARD, CALIFORNIA

UNINCORPORATED ALAMEDA COUNTY

APN: 413–0035–014–03

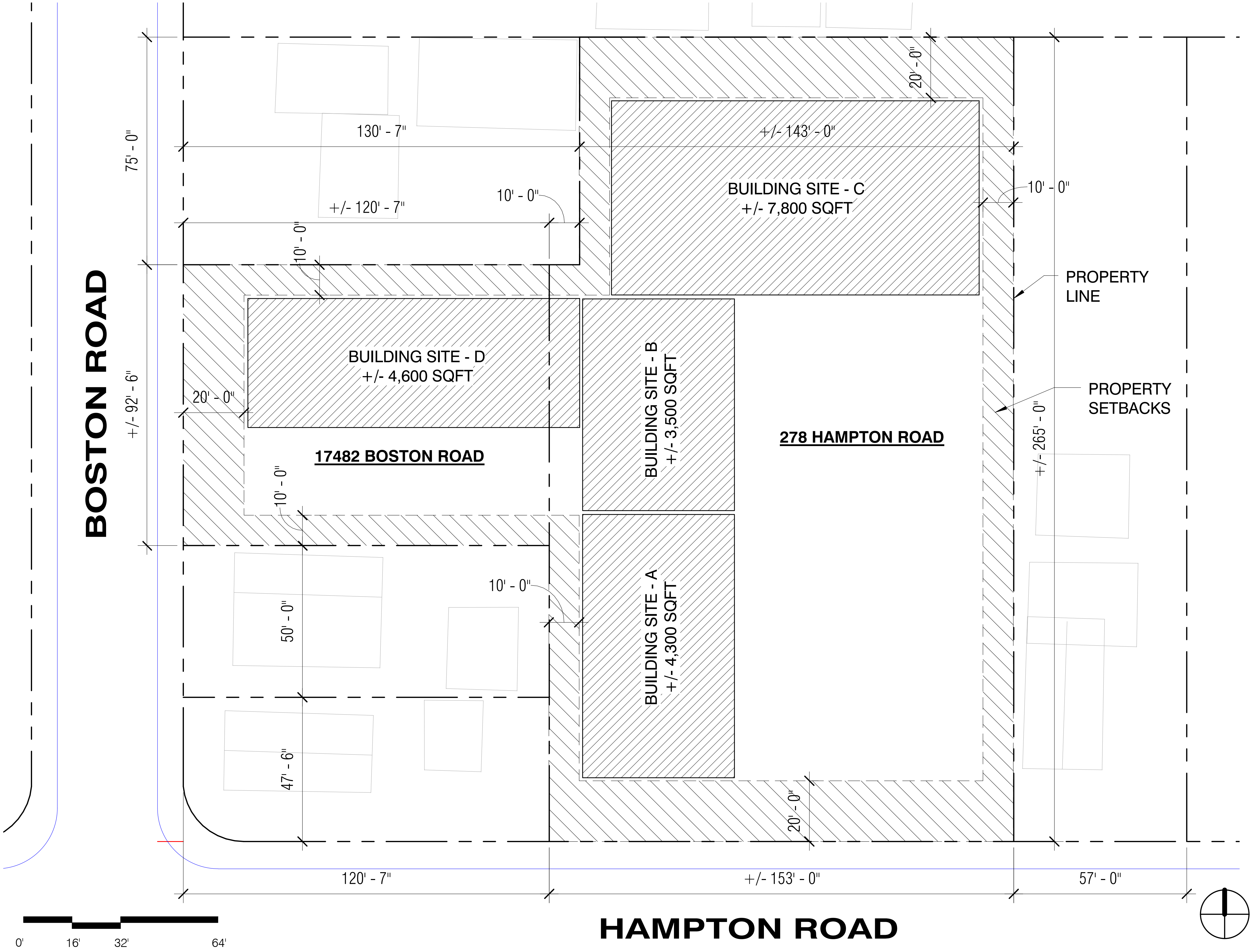
TOPOGRAPHIC SURVEY

–	–
–	–
–	–
–	–
–	–
REVISIONS	BY

JOB NO: 2130795
DATE: 10–4–13
SCALE: 1" = 16'
DRAWN BY: DB
SHEET NO:

SU1

1 OF 1 SHEETS



SKETCH #: **ASK-01**

SCALE: **1/32"=1'-0"**

DRAWING REF:

DATE: **9/5/2013**

CHERRYLAND COMMUNITY CENTER
278 HAMPTON ROAD
CHERRYLAND CA

NT JOB#: **21106**

REF #:

DRAFT!

noll & tam
Architects and Planners
729 Heinz Avenue
Berkeley, CA 94710
tel 510.649.8295
fax 510.649.3008

Appendix C

Geotechnical Report

ROCKRIDGE
GEOTECHNICAL

Prepared for **County of Alameda**

FINAL REPORT
GEOTECHNICAL INVESTIGATION
PROPOSED CHERRYLAND COMMUNITY CENTER
278 HAMPTON ROAD/17482 BOSTON ROAD
CHERRYLAND, CALIFORNIA

UNAUTHORIZED USE OR COPYING OF THIS DOCUMENT IS STRICTLY PROHIBITED BY ANYONE OTHER THAN THE CLIENT FOR THE SPECIFIC PROJECT

April 4, 2014
Project No. 13-590

ROCKRIDGE
GEOTECHNICAL

April 4, 2014
Project No. 13-590

Mr. Brian Laczko, Architect
Project Manager, GSA-TSD
County of Alameda
1221 Oak Street
Oakland, California 94612

Subject: Final Report
Geotechnical Investigation
Cherryland Community Center
278 Hampton Road/17482 Boston Road
Cherryland, California

Dear Mr. Laczko,

Attached is our final geotechnical report, April 4, 2014, for the proposed Cherryland Community Center to be constructed in Cherryland, California. Our services were provided in accordance with our Professional Services Contract with the County of Alameda, dated September 17, 2013.

The project site is comprised of two adjacent parcels at 278 Hampton Road and 17482 Boston Road. The 278 Hampton Road parcel is relatively level and is currently a vacant lot with several mature trees. It is partly covered with asphalt concrete pavement and concrete pads associated with previous development on the site. Based on our review of historic photographs available on Google Earth, it appears three structures previously occupied the 278 Hampton Road site, including a residence in the front half of the site and two long rectangular structures in the rear half of the site. The 17482 Boston Road parcel slopes up very gently to the east and is currently occupied by a vacant 1- to 2-story residence with a small front and backyard.

Plans are to construct a 20,000-square-foot, one-story community center on the site. The currently proposed building layout consists of three buildings along the west and north sides of the 278 Hampton Road parcel and one building on the north side of the 17482 Boston Road parcel. We anticipate the buildings will be framed in wood or light-gauge metal and will have concrete slab-on-grade floors located near existing grades. Structural design loads were not available at the time this report was prepared; however, we expect the loads will be light as is typical for these types of structures. We anticipate improvements on the remainder of the two parcels will include parking areas, concrete flatwork, new utilities, and landscaping.

From a geotechnical standpoint, we conclude the site can be developed as planned, provided the recommendations presented in this report are incorporated into the project plans and specifications and implemented during construction. The site is underlain by up to about 15 feet of sandy silt, silty sand, and sand. The upper sandy silt layer is susceptible to severe collapse when wetted under moderate loading. The underlying loose to medium dense sand and silty sand is susceptible to cyclic densification during a major earthquake, which will result in settlement of improvements supported at grade. Spread footing foundations bearing on the collapsible sandy silt in its existing condition may experience excessive static settlement when the soil is wetted from irrigation or other sources. The potential for settlement due to wetting can be mitigated, however, by overexcavating and compacting the sandy silt. Therefore, we conclude the proposed buildings may be supported on spread footings bearing on recompacted soil (engineered fill). Specific recommendations for compaction of the engineered fill and other geotechnical aspects of the project are presented herein.

The recommendations contained in our report are based on a limited subsurface exploration. Consequently, variations between expected and actual subsurface conditions may be found in localized areas during construction. Therefore, we should be engaged to observe site grading and foundation installation during which time we may make changes in our recommendations, if deemed necessary.

We appreciate the opportunity to provide our services to you on this project. If you have any questions, please call.

Sincerely yours,
ROCKRIDGE GEOTECHNICAL, INC.

CRAIG S. SHIELDS
GE2116
3/31/15

Craig S. Shields, P.E., G.E.
Principal Geotechnical Engineer

Enclosure

TABLE OF CONTENTS

LIST OF FIGURES

APPENDIX A

APPENDIX B

GEOTECHNICAL INVESTIGATION
PROPOSED CHERRYLAND COMMUNITY CENTER
278 HAMPTON ROAD/17482 BOSTON ROAD
Cherryland, California

1.0 INTRODUCTION

This report presents the results of the geotechnical investigation performed by Rockridge Geotechnical, Inc. for the proposed Cherryland Community Center to be constructed in Cherryland, California. The site is located on the north side of Hampton Road between Boston Road and Standish Avenue, as shown on the Site Location Map (Figure 1).

The project site is comprised of two adjacent parcels at 278 Hampton Road and 17482 Boston Road. The 278 Hampton Road parcel is relatively level and is currently a vacant lot with several mature trees. It is partly covered with asphalt concrete pavement and concrete pads associated with previous development on the site. Based on our review of historic photographs available on Google Earth, it appears three structures previously occupied the 278 Hampton Road site, including a residence in the front half of the site and two long rectangular structures in the rear half of the site. The 17482 Boston Road parcel slopes up very gently to the east and is currently occupied by a vacant 1- to 2-story residence with a small front and backyard.

Plans are to construct a 20,000-square-foot, one-story community center on the site. The currently proposed building layout, which is shown on Figure 2, consists of three buildings along the west and north sides of the 278 Hampton Road parcel and one building on the north side of the 17482 Boston Road parcel. We anticipate the buildings will be framed in wood or light-gauge metal and will have concrete slab-on-grade floors located near existing grades. Structural design loads were not available at the time this report was prepared; however, we expect the loads will be light as is typical for these types of structures. We anticipate improvements on the remainder of the two parcels will include parking areas, concrete flatwork, new utilities, and landscaping.

2.0 SCOPE OF WORK

Our geotechnical investigation was performed in accordance with our proposal dated September 13, 2013 and our Professional Services Contract with the County of Alameda, dated September 17, 2013. Our scope of services consisted of exploring subsurface conditions at the site by drilling five test borings and advancing two cone penetration tests (CPTs), and performing laboratory testing and engineering analyses to develop conclusions and recommendations regarding:

- site seismicity and seismic hazards, including the potential for liquefaction and lateral spreading, and total and differential settlement resulting from liquefaction and/or cyclic densification
- the most appropriate foundation type for the proposed structures
- design criteria for the recommended foundation type(s), including vertical and lateral capacities
- estimates of foundation settlement under static and seismic conditions
- site grading and excavation, including criteria for fill quality and compaction
- subgrade preparation for interior and exterior concrete slabs-on-grade
- corrosivity of the near-surface soil and the potential effects on buried concrete and metal structures and foundations
- flexible (asphalt concrete) and rigid (Portland cement concrete) pavement design
- 2013 California Building Code (CBC) site class and design spectral response acceleration parameters
- construction considerations.

3.0 FIELD INVESTIGATION

Subsurface conditions at the site were explored by drilling five test borings and advancing two CPTs at the approximate locations shown on Figure 2. Prior to advancing the test borings and CPTs, we obtained a drilling permit from the Alameda County Public Works Agency (ACPWA). We also contacted Underground Service Alert (USA) to notify them of our work, as required by law and retained a private utility locator, Precision Locating, LLC, to confirm the borings and

CPT locations were clear of existing utilites. We also performed infiltration testing of the near-surface at three locations selected by the project team to provide information for design of bio-retention areas.

3.1 Test Borings

Five test borings, designated as Borings B-1 through B-5, were drilled on November 20, 2013 by Exploration GeoServices of San Jose, California at the approximate locations shown on Figure 2. The borings were each drilled to a depth of 26-1/2 feet below the existing ground surface (bgs) using a truck-mounted drill rig equipped with eight-inch-diameter hollow-stem augers. During drilling, our field engineer logged the soil encountered and obtained representative samples for visual classification and laboratory testing. The boring logs are presented on Figures A-1 through A-5 in Appendix A. The soil encountered in the borings was classified in accordance with the classification chart presented on Figure A-6 in Appendix A.

Soil samples were obtained using the following samplers:

- Sprague and Henwood (S&H) split-barrel sampler with a 3.0-inch outside diameter and 2.5-inch inside diameter, lined with 2.43-inch inside diameter brass tubes.
- Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside and 1.5-inch inside diameter, without liners.

The samplers were driven with a 140-pound, downhole wireline hammer falling about 30 inches per drop. Dynamic testing performed on this hammer by GRL Engineers, Inc. on April 5, 2013 indicates the average energy transfer ratio for this hammer is 37 percent. The samplers were 18 inches at each sample depth and the hammer blows required to drive the samplers were recorded every six inches and are presented on the boring logs. A “blow count” is defined as the number of hammer blows per six inches of penetration or 50 blows for six inches or less of penetration. The blow counts required to drive the S&H and SPT samplers were converted to approximate SPT N-values using factors of 0.6 and 0.4, respectively, to account for sampler type and approximate hammer energy. The blow counts used for this conversion were the last two blow counts. The converted SPT N-values are presented on the boring logs.

Upon completion of drilling, the boreholes were backfilled with cement grout under the observation of the ACPWA inspector. The soil cuttings generated by the borings spread on the ground surface next to the borings.

3.2 Cone Penetration Tests

Two CPTs, designated as CPT-1 and CPT-2, were performed to provide in-situ soil data at the approximate locations shown on Figure 2. John Sarmiento & Associates of Orinda, California advanced the CPTs on November 20, 2013, each to a depth of 50 feet bgs.

The CPTs were performed by hydraulically pushing a 1.4-inch-diameter cone-tipped probe with a projected area of 10 square centimeters into the ground. The cone-tipped probe measured tip resistance and the friction sleeve behind the cone tip measured frictional resistance. Electrical strain gauges within the cone continuously measured soil parameters for the entire depth advanced. Soil data, including tip resistance and frictional resistance, were recorded by a computer while the test was conducted. Accumulated data were processed by computer to provide engineering information such as the types and approximate strength characteristics of the soil encountered. The CPT logs, showing tip resistance and friction ratio by depth, as well as interpreted SPT N-values, soil shear strength parameters, and soil classifications, are presented in Appendix A on Figures A-7 and A-8. Upon completion, the CPTs were backfilled with cement grout.

3.3 Laboratory Testing

We re-examined the soil samples obtained from our borings to confirm the field classifications and select representative samples for laboratory testing. Soil samples were tested to measure moisture content, dry density, fines content (i.e., particles passing the No. 200 sieve), collapse potential, corrosivity, and resistance value (R-value). The results of the laboratory tests are presented on the boring logs and in Appendix B.

3.4 Infiltration Testing

To provide information on the infiltration rate (i.e., permeability) of the near-surface soil, we performed infiltration tests on March 7, 2014 at the three locations designated as I-1 through I-3 on Figure 2. The infiltration tests were performed at the bottom of two-foot-square test pits excavated to a depth of approximately two feet bgs. The soil exposed at the bottom of the test pits consisted of sandy silt with some clay at the I-1 and I-3 locations and silty sand at the I-2 location. To check whether a soil with higher permeability was present below the relatively low-permeability near-surface soil, we hand-augered a boring to a depth of seven feet bgs about five feet horizontally from the infiltration test locations. At all three locations, the soil type was relatively uniform to a depth of seven feet bgs.

We performed the infiltration tests using a 12-inch-diameter single-ring infiltrometer. The space between the test pit walls and the infiltrometer was filled with water to the same level as the water inside the infiltrometer to prevent seepage around the edge of the infiltrometer. The infiltration rate at the I-1 location ranged from about 0.3 to 1 inch/hour for the first 2-1/4 hours of the test while the soil below the test pit was being saturated; however, the rate slowed to essentially zero for the next hour (i.e., after saturation). At the I-3 location, the infiltration rate was essentially zero throughout the hour-long test period and, therefore, the test was terminated. At the I-2 location, the initial infiltration rate was as high as 7 inches/hour, but the rate gradually slowed as the soil became saturated. After about 2-1/2 hours, a steady infiltration rate of 1.9 inches per hour was measured.

4.0 SUBSURFACE CONDITIONS

The project site, as shown on Figure 5, is underlain by Holocene-age (11,000 years old to recent) natural alluvial fan levee deposits associated with flooding of nearby San Lorenzo Creek. Our borings and CPTs indicate the site is blanketed by approximately 10 to 15 feet of slightly moist, medium stiff to stiff, non-plastic sandy silt and loose to medium dense sand and silty sand.

Laboratory collapse potential tests indicate the upper sandy silt layer is susceptible to severe collapse when saturated under moderate loading.

The sandy silt/silty sand is underlain by stiff to very stiff clay and sandy clay of low to moderate plasticity interbedded with occasional layers of medium dense to dense sand and silty sand. These sand and silty sand layers are generally thin (less than two feet thick), except at CPT-2, where dense sand was encountered between depths of 43 and 50 feet bgs, the maximum depth explored.

Groundwater was not encountered in the borings, which were each drilled to a depth of 26.5 feet bgs. Groundwater was measured at depths of approximately 30 and 27 feet bgs in CPT-1 and CPT-2, respectively. To estimate the depth of the historically high groundwater, we reviewed the publication by the California Geological Survey titled *Seismic Hazard Zone Report for the Hayward 7.5-Minute Quadrangle, Alameda County, California* (2003). According to Plate 1.2 in the report, the depth to the historically high groundwater in the immediate site vicinity is 20 feet bgs. We anticipate the depth to groundwater varies several feet seasonally, depending on rainfall amounts.

5.0 SEISMIC CONSIDERATIONS

5.1 Regional Seismicity

The site is located in the Coast Ranges geomorphic province of California that is characterized by northwest-trending valleys and ridges. These topographic features are controlled by folds and faults that resulted from the collision of the Farallon plate and North American plate and subsequent strike-slip faulting along the San Andreas Fault system. The San Andreas Fault is more than 600 miles long from Point Arena in the north to the Gulf of California in the south. The Coast Ranges province is bounded on the east by the Great Valley and on the west by the Pacific Ocean.

The major active faults in the area are the Hayward, San Andreas, Calaveras, and San Gregorio faults. These and other faults in the region are shown on Figure 4. For these and other active faults within a 50-kilometer radius of the site, the distance from the site and estimated mean characteristic Moment magnitude[1] [2007 Working Group on California Earthquake Probabilities (WGCEP) (USGS 2008) and Cao et al. (2003)] are summarized in Table 1.

TABLE 1
Regional Faults and Seismicity

Fault Segment	Approximate Distance from Site (km)	Direction from Site	Mean Characteristic Moment Magnitude
Total Hayward	2	Northeast	7.00
Total Hayward-Rodgers Creek	2	Northeast	7.33
Total Calaveras	15	East	7.03
Mount Diablo Thrust	20	Northeast	6.70
Green Valley Connected	26	Northeast	6.80
N. San Andreas – Peninsula	28	West	7.23
N. San Andreas (1906 event)	28	West	8.05
Monte Vista-Shannon	30	Southwest	6.50
Greenville Connected	33	East	7.00
San Gregorio Connected	38	West	7.50
N. San Andreas - North Coast	42	West	7.51
Great Valley 5, Pittsburg Kirby Hills	44	Northeast	6.70

---

[1] Moment magnitude is an energy-based scale and provides a physically meaningful measure of the

Since 1800, four major earthquakes have been recorded on the San Andreas Fault. In 1836, an earthquake with an estimated maximum intensity of VII on the Modified Mercalli (MM) scale occurred east of Monterey Bay on the San Andreas Fault (Toppozada and Borchardt 1998). The estimated Moment magnitude, M_w, for this earthquake is about 6.25. In 1838, an earthquake occurred with an estimated intensity of about VIII-IX (MM), corresponding to an M_w of about 7.5. The San Francisco Earthquake of 1906 caused the most significant damage in the history of the Bay Area in terms of loss of lives and property damage. This earthquake created a surface rupture along the San Andreas Fault from Shelter Cove to San Juan Bautista approximately 470 kilometers in length. It had a maximum intensity of XI (MM), an M_w of about 7.9, and was felt 560 kilometers away in Oregon, Nevada, and Los Angeles. The most recent earthquake to affect the Bay Area was the Loma Prieta Earthquake of 17 October 1989 with an M_w of 6.9. This earthquake occurred in the Santa Cruz Mountains about 75 kilometers south of the site.

In 1868, an earthquake with an estimated maximum intensity of X on the MM scale occurred on the southern segment (between San Leandro and Fremont) of the Hayward Fault. The estimated M_w for the earthquake is 7.0. In 1861, an earthquake of unknown magnitude (probably an M_w of about 6.5) was reported on the Calaveras Fault. The most recent significant earthquake on this fault was the 1984 Morgan Hill earthquake ($M_w = 6.2$).

The U.S. Geological Survey's (USGS) 2007 WGCEP has compiled the earthquake fault research for the San Francisco Bay area in order to estimate the probability of fault segment rupture. They have determined that the overall probability of moment magnitude 6.7 or greater earthquake occurring in the San Francisco Bay Region during the next thirty years is 63 percent. The highest probabilities are assigned to the Hayward/Rodgers Creek Fault and the northern segment of the San Andreas Fault. These probabilities are 31 and 21 percent, respectively (USGS 2008).

---

size of a faulting event. Moment magnitude is directly related to average slip and fault rupture area.

5.2 Geologic Hazards

Because the project site is in a seismically active region, we evaluated the potential for earthquake-induced geologic hazards including ground shaking, ground surface rupture, liquefaction,[2] lateral spreading,[3] and cyclic densification[4]. We used the results of our field investigation to evaluate the potential of these phenomena occurring at the project site.

5.2.1 Ground Shaking

The ground shaking intensity felt at the project site will depend on: 1) the size of the earthquake (magnitude), 2) the distance from the site to the fault source, 3) the directivity (focusing of earthquake energy along the fault in the direction of the rupture), and 4) subsurface conditions. The site is about two kilometers from the Hayward Fault. Therefore, the potential exists for a large earthquake to induce strong to very strong ground shaking at the site during the life of the project.

5.2.2 Ground Surface Rupture

Historically, ground surface displacements closely follow the trace of geologically young faults. The site is not within an Earthquake Fault Zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act, and no known active or potentially active faults exist on the site. We therefore conclude the risk of fault offset at the site from a known active fault is very low. In a seismically active area, the remote possibility exists for future faulting in areas where no faults previously existed; however, we conclude the risk of surface faulting and consequent secondary ground failure from previously unknown faults is also very low.

---

[2] Liquefaction is a phenomenon where loose, saturated, cohesionless soil experiences temporary reduction in strength during cyclic loading such as that produced by earthquakes.

[3] Lateral spreading is a phenomenon in which surficial soil displaces along a shear zone that has formed within an underlying liquefied layer. Upon reaching mobilization, the surficial blocks are transported downslope or in the direction of a free face by earthquake and gravitational forces.

[4] Cyclic densification is a phenomenon in which non-saturated, cohesionless soil is compacted by earthquake vibrations, causing ground-surface settlement.

5.2.3 Cyclic Densification

Seismically induced compaction or cyclic densification of non-saturated sand (sand above the groundwater table) caused by earthquake vibrations may result in differential settlement. Based on the subsurface data from our field investigations, we conclude the sandy silty, silty sand and sand above the groundwater table is susceptible to cyclic densification during a major earthquake. With no recompaction of the upper five feet of soil, we estimate ground surface settlement of up to two inches could occur due to cyclic densification during a Magnitude 7.33 earthquake generating a peak ground acceleration (PGA) of 0.89 times gravity (g); this peak ground acceleration is consistent with the Maximum Considered Earthquake Geometric Mean (MCE_G) peak ground acceleration adjusted for site effects (PGA_M). If the upper five feet of soil is overexcavated and recompacted, as recommended in Section 6.1 below, we estimate total settlement associated with cyclic densification would be less than 1-1/2 inches and differential settlement would be less than ¾ inch over a horizontal distance of 30 feet. It should be noted the computed cyclic densification settlement for a Magnitude 7.33 earthquake and a PGA of 0.6g is less than ½ inch.

5.2.4 Liquefaction and Associated Hazards

Liquefaction is a phenomenon in which saturated soil temporarily loses strength from the build-up of excess pore water pressure, especially during earthquake-induced cyclic loading. Soil susceptible to liquefaction includes loose to medium dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits. Flow failure, lateral spreading, differential settlement, loss of bearing strength, ground fissures and sand boils are evidence of excess pore pressure generation and liquefaction. We evaluated liquefaction potential at the site using the data collected in our CPTs. Our liquefaction analysis using CPT data was performed using methodology proposed by P.K. Robertson (2009).

As shown on Figure 5, the site has been mapped within a zone of liquefaction potential on the map titled *State of California, Sesimic Hazard Zones, Hayward Quadrangle, Official Map,* prepared by the Californa Geological Survey (CGS), dated July 2, 2003. Special Publication 117 by the California Geological Survey (2008) recommends subsurface investigations in mapped liquefaction potential areas be performed using rotary-wash borings and/or cone penetration tests.

Our analysis was performed using a groundwater depth of 20 feet bgs, which is consistent with the historically high groundwater for the site vicinity. In accordance with the 2013 CBC, we used a peak ground acceleration of 0.89 times gravity (g) in our liquefaction evaluation; this peak ground acceleration is consistent with the Maximum Considered Earthquake Geometric Mean (MCE_G) peak ground acceleration adjusted for site effects (PGA_M). We also used a Moment magnitude 7.33 earthquake, which is consistent with the mean characteristic Moment magnitude for the Hayward Fault, as presented in Table 1. A summary of the liquefaction analysis is presented in Appendix C of this report.

At the CPT-1 location, thin potentially liquefiable soil layers or lenses were encountered between depths of 23 and 48 feet feet bgs at the site. These layers are typically less than one foot thick. We estimate ground-surface settlement associated with post-liquefaction reconsolidation of these layers could be up to 0.6 inches. Our analysis indicates the potential for liquefaction to occur at the CPT-2 location is low. We estimate differential settlement associated with liquefaction could be up to ¼ inch over a horizontal distance of 30 feet.

Lateral spreading occurs when a continuous layer of soil liquefies at depth and the soil layers above move toward an unsupported face, such as a shoreline slope, or in the direction of a regional slope or gradient. Based on the discontinuous nature and depth of the potentially liquefiable layers, we conclude the potential for lateral spreading to occur at the project site is very low.

6.0 DISCUSSION AND CONCLUSIONS

Based on the results of our geotechnical investigation, we conclude the proposed project can be developed as planned. The primary geotechnical concern is the presence of collapsible sandy silt blanketing the site. This and other geotechnical concerns are discussed in the following sections.

6.1 Foundation Support and Settlement

The site is underlain by up to about 15 feet of sandy silt, silty sand, and sand. The upper sandy silt layer is susceptible to severe collapse when wetted under moderate loading. The underlying loose to medium dense sand and silty sand is susceptible to cyclic densification during a major earthquake, which will result in settlement of improvements supported at grade. Spread footing foundations bearing on the collapsible sandy silt in its existing condition may experience excessive static settlement when the soil is wetted from irrigation or other sources. The potential for settlement due to wetting can be mitigated, however, by overexcavating and compacting the sandy silt. Therefore, we conclude the proposed buildings may be supported on spread footings bearing on recompacted soil (engineered fill). The engineered fill should extend at least five feet below the existing ground surface. Recommendations for engineered fill quality and compaction are presented in Section 7.1.

Our settlement analyses indicate total settlement of spread footings bearing on engineered fill, designed using the allowable bearing pressures presented in Section 7.2 of this report, will be on the order of ½ inch and differential settlement will be less than ¼ inch over a 30-foot horizontal distance. An additional two inches of total settlement and one inch of differential settlement over a horizontal distance of 30 feet may occur due to a combination of cyclic densification and post-liquefaction reconsolidation during the Maximum Credible Earthquake (i.e., PGA of 0.89g). During a Magnitude 7.33 earthquake generating a PGA of 0.6g, the estimated seismically induced total settlement is less than one inch and the differential settlement is about ½ inch over a horizontal distance of 30 feet.

6.2 Construction Considerations

The soil to be excavated for the new foundations and underground utilities is expected to be predominantly sandy silt, which is highly susceptible to "pumping" (i.e., excessive deflection under wheel loads) when compacted at a high moisture content. If site grading is performed during the rainy season, the sandy silt will likely have to be dried before compaction can be achieved. Heavy rubber-tired equipment could cause pumping of the sandy silt and, therefore, should be avoided if grading occurs during the rainy season.

Excavations that will be deeper than five feet and will be entered by workers should be sloped or shored in accordance with CAL-OSHA standards (29 CFR Part 1926). The contractor should be responsible for the construction and safety of temporary slopes.

6.3 Soil Corrosivity

Corrosivity testing was performed by Sunland Analytical of Rancho Cordova, California on a sample of soil obtained during our field investigation from a depth of 3 feet bgs. The results of the test are presented in Appendix B of this report. Based on the resistivity test results, the sample would be classified as moderately corrosive to buried steel, which is typical of fine-grained soil. Accordingly, buried iron, steel, cast iron, galvanized steel, and dielectric-coated steel or iron should be properly protected against corrosion. The results indicate that sulfate ion concentrations are insufficient to damage reinforced concrete structures below ground, and the chloride concentration of the soil does not present a problem with reinforcing steel in buried concrete structures.

7.0 RECOMMENDATIONS

Our recommendations for site preparation and grading, design of foundations, and other geotechnical aspects of the project are presented in this section.

7.1 Site Preparation and Grading

Site clearing should include removal of all existing foundations, slabs, pavements, and underground utilities. Any vegetation and the upper 3 to 4 inches of organic topsoil should be stripped in areas to receive improvements. Tree roots with a diameter greater than 1/2 inch within three feet of subgrade should also be removed. Removed asphalt concrete and concrete should be taken to a recycling facility.

After site clearing is completed, the proposed building pads should be excavated to a depth of at least five feet below existing site grades and at least three feet below the bottom of proposed footings, whichever is deeper. If the embedment depth of a particular footing results in an overexcavation deeper than five feet below existing site grades, the three-foot overexcavation beneath that footing can be limited to an area extending beneath and three feet beyond the edges of the footing.

Any areas to receive pavement or concrete flatwork, including sidewalks, should be excavated to at least three feet below existing grades. The excavations should extend at least five feet beyond the perimeters of the proposed buildings and at least three feet beyond the edges of pavement and flatwork, except where constrained by property lines or existing utilities. The exposed subgrade at the base of the excavations should be scarified to a depth of at least eight inches, moisture-conditioned to above optimum moisture content, and compacted to at least 92 percent relative compaction[5]. The excavated material should then be placed in lifts not exceeding eight inches in

---

[5] Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same material, as determined by the ASTM D1557 laboratory compaction procedure.

loose thickness, moisture-conditioned to above optimum moisture content, and compacted to at least 92 percent relative compaction.

Subgrade soil consisting of clean sand or gravel (defined as soil with less than 10 percent fines by weight) should be compacted to at least 95 percent relative compaction. Soil subgrade for vehicular pavements should be compacted to at least 95 percent relative compaction and be non-yielding. The soil subgrade should be kept moist until it is covered by fill for improvements.

7.1.1 Fill Quality

Material excavated at the site will primarily consist of non-plastic sandy silt and silty sand that may be reused as fill, provided it is free or organic matter and contain no rocks or lumps greater than three inches in greatest dimension. If imported fill (select fill) is required, it should be free of organic matter, contain no rocks or lumps larger than three inches in greatest dimension, have a liquid limit less than 40 and plasticity index less than 12, and be approved by the Geotechnical Engineer. Samples of proposed select fill material should be submitted to the Geotechnical Engineer at least three business days prior to use at the site. The grading contractor should provide analytical test results or other suitable environmental documentation indicating the imported fill is free of hazardous materials at least three days before use at the site. If this data is not available, up to two weeks should be allowed to perform analytical testing on the proposed imported material.

7.1.2 Utility Trenches

Excavations for utility trenches can be readily made with a backhoe. All trenches should conform to the current CAL-OSHA requirements. Excavations in areas where recompacted fill is placed should stand vertically. For trenches excavated outside the recompacted fill areas, we anticipate that some caving may occur in the relatively dry sandy silt.

Backfill for utility trenches and other excavations is also considered fill, and it should be compacted according to the recommendations presented in Section 7.1. Jetting of trench backfill should not be permitted. Special care should be taken when backfilling utility trenches in pavement areas. Poor compaction may cause excessive settlements, resulting in damage to the pavement section.

To provide uniform support, pipes or conduits should be bedded on a minimum of four inches of sand or fine gravel. After the pipes and conduits are tested, inspected (if required) and approved, they should be covered to a depth of six inches with sand or fine gravel, which should be mechanically tamped.

Foundations for the proposed buildings should be bottomed below an imaginary line extending up at a 1.5:1 (horizontal to vertical) inclination from the base of utility trenches. Alternatively, the portion of the utility trench (excluding bedding) that is below the 1.5:1 line can be backfilled with controlled low-strength material (CLSM) with a 28-day unconfined compressive strength of at least 100 pounds per square inch (psi).

7.1.3 Surface Drainage

Positive surface drainage should be provided around the buildings to direct surface water away from the foundations. To reduce the potential for water ponding adjacent to the buildings, we recommend the ground surface within a horizontal distance of five feet from the buildings slope down away from the buildings with a surface gradient of at least two percent in unpaved areas and one percent in paved areas. In addition, roof downspouts should be discharged into controlled drainage facilities to keep the water away from the foundations.
Bioretention/treatment areas within five feet of the buildings should be lined with an impermeable membrane at least 10 mils thick, such as Stegowrap, and provided with a subdrain.

7.2 Spread Footings

We conclude the proposed buildings may be supported on continuous or individual spread footings bottomed on properly compacted fill. Continuous footings should be at least 12 inches wide and isolated spread footings should be at least 18 inches wide. Footings should extend at least 18 inches below the lowest adjacent exterior finished grade and at least 12 inches below the lowest adjacent interior soil subgrade, whichever is lower. Footings should also be founded below an imaginary line extending up at an inclination of 2:1 from bioretention/treatment areas.

The footings may be designed using allowable bearing pressures of 3,000 pounds per square foot (psf) for dead-plus-live loads and 4,000 psf for total design loads, which include wind or seismic forces. The allowable bearing pressures include factors of safety of at least 2.0 and 1.5, for static and transient loading conditions, respectively.

Lateral loads may be resisted by a combination of passive pressure on the vertical faces of the footings and friction between the bottoms of the footings and the supporting soil. To compute passive resistance, we recommend using an equivalent fluid weight of 300 pounds per cubic foot (pcf). The upper foot of soil should be ignored unless confined by a slab or pavement. Frictional resistance should be computed using a base friction coefficient of 0.35. These values may be used in combination without reduction. The passive pressure and frictional resistance values include a factor of safety of at least 1.5.

Footing excavations should be free of standing water, debris, and disturbed materials prior to placing concrete. The bottoms and sides of the footing excavations should be moistened following excavation and maintained in a moist condition until concrete is placed. We should check footing excavations prior to placement of reinforcing steel.

7.3 Concrete Slab-on-Grade Floor

Where water vapor transmission through the floor slab is undesirable, we recommend installing a capillary moisture break and a water vapor retarder beneath the slab. A capillary moisture break consists of at least four inches of clean, free-draining gravel or crushed rock. The vapor retarder should meet the requirements for Class B vapor retarders stated in ASTM E1745. The vapor retarder should be placed in accordance with the requirements of ASTM E1643. These requirements include overlapping seams by six inches, taping seams, and sealing penetrations in the vapor retarder. *If required by the structural engineer*, the vapor retarder may be covered with two inches of sand to aid in curing the concrete and to protect the vapor retarder during slab construction. The sand overlying the vapor retarder should be moist at the time concrete is placed. However, excess water trapped in the sand could eventually be transmitted as vapor through the slab. Therefore, if rain is forecast prior to pouring the slab, the sand should be covered with plastic sheeting to avoid wetting. If the sand becomes wet, concrete should not be placed until the sand has been dried or replaced.

The particle size of the capillary break material and sand (if used) should meet the gradation requirements presented in Table 2 below.

TABLE 2
Gradation Requirements for Capillary Moisture Break

Sieve Size	Percentage Passing Sieve
Gravel or Crushed Rock	
1 inch	90 – 100
3/4 inch	30 – 100
1/2 inch	5 – 25
3/8 inch	0 – 6
Sand	
No. 4	100
No. 200	0 – 5

Concrete mixes with high water/cement (w/c) ratios result in excess water in the concrete, which increases the cure time and results in excessive vapor transmission through the slab. Therefore, concrete for the floor slab should have a low w/c ratio - less than 0.50. If necessary, workability should be increased by adding plasticizers. In addition, the slab should be properly cured. Before floor coverings, if any, are placed, the contractor should check that the concrete surface and the moisture emission levels (if emission testing is required) meet the manufacturer’s requirements.

7.4 Pavement Design

7.4.1 Flexible (Asphalt Concrete) Pavement Design

The State of California flexible pavement design method was used to develop the recommended asphalt concrete pavement sections. For AC pavement design, we used an R-value of 19. Recommended pavement sections for traffic indices ranging from 4.5 to 5.5 are presented in Table 3.

TABLE 3
Recommended AC Pavement Sections

Traffic Index	Asphaltic Concrete (inches)	Class 2 Aggregate Base R = 78 (inches)
4.5	2.5	7.0
5.0	3.0	7.5
5.5	3.0	9.0

The upper six inches of the subgrade should be moisture-conditioned and compacted in accordance with requirements presented in Section 7.1. The aggregate base should be moisture conditioned to near optimum and compacted to at least 95 percent relative compaction.

To prevent irrigation water from entering the pavement section, curbs adjacent to landscaped areas should extend through the aggregate base and at least three inches into the underlying soil subgrade.

7.4.2 Rigid (Portland Cement Concrete) Pavement

Concrete pavement design is based on a maximum single-axle load of 20,000 pounds and a maximum tandem axle load of 32,000 pounds and light truck traffic (i.e., a few trucks per week). The recommended rigid pavement section for these axle loads is six inches of Portland cement concrete over six inches of Class 2 aggregate base.

The modulus of rupture of the concrete should be at least 500 psi at 28 days. Contraction joints should be constructed at 15-foot spacing. Where the outer edge of a concrete pavement meets asphalt concrete pavement, the concrete slab should be thickened by 50 percent at a taper not to exceed a slope of 1 in 10. For areas that will receive weekly garbage truck traffic, we recommend the slab be reinforced with a minimum of No. 4 bars at 16-inch spacing in both directions. Recommendations for subgrade preparation and aggregate base compaction for concrete pavement are the same as those we have described above for asphalt concrete pavement.

7.4.3 Permeable Interlocking Concrete Pavers

We recommend permeable interlocking concrete pavements (ICP) be designed in accordance with the guidelines presented by the Interlocking Concrete Pavement Institute (ICPI 2005). These guidelines include specific recommendations for permeable aggregate subbase, base, and bedding courses to be placed beneath ICP pavements. Based on the infiltration tests and soil gradation, we estimate the recompacted on-site soil will have an infiltration rate ranging from less than 0.1 inches per hour up to about 2 inches per hour where silty sand is exposed at pavement subgrade elevation. Therefore, we recommend permeable pavers be designed for *partial* exfiltration of water into the subgrade soil. This requires installing a subdrain system at the base of the pervious aggregate materials, which are underlain by an filter fabric. ICPI’s generalized paver section partial exfiltration is presented on Figure 6. If the permeable pavers will be subjected to vehicular traffic, we recommend the geotextile shown on Figure 6 be replaced with a Tensar TriAx TX7 geogrid to mitigate the potential for rutting of the subgrade.

The soil subgrade beneath ICP pavements should be prepared and compacted in accordance with the recommendations presented in Section 7.1. In addition, the subgrade should be a firm and non-yielding surface. The subgrade should be proof-rolled under the observation of our field engineer to confirm it is non-yielding prior to placing the filter fabric and aggregate base materials. The soil subgrade at the bottom of the permeable section should slope down toward the drain pipe trench at a gradient of at least two percent. The perforated pipe should slope down to a suitable outlet at a minimum gradient of one percent. The pipe should be placed with the perforations down on a minimum of two inches of permeable subbase.

ICPI's guidelines call for 1-1/2 to 2 inches of bedding material consisting of ASTM No. 8 aggregate directly below the pavers. This material is also recommended for fill material between the pavers. As shown in Table 4 below, this material consists of fine gravel with 10 to 30 percent sand.

TABLE 4
Gradation Requirements for ASTM No. 8 Aggregate

Sieve Size	Percentage Passing Sieve
1/2 inch	100
3/8 inch	85 – 100
No. 4	10 – 30
No. 8	0 – 10
No. 16	0 – 5

The ASTM No. 8 bedding should be underlain by a permeable base course of ASTM No. 57 crushed aggregate. As shown in Table 5, ASTM No. 57 aggregate consists of open-graded gravel with a gradation between that of the 3/4-inch drain rock and the ASTM No. 8 aggregate.

TABLE 5
Gradation Requirements for ASTM No. 57 Aggregate

Sieve Size	Percentage Passing Sieve
1-1/2 inch	100
1 inch	95 – 100
1/2 inch	25 – 60
No. 4	0 – 10
No. 8	0 – 5

The ASTM No. 57 permeable base course should be underlain by a permeable subbase course of ASTM No. 2 crushed aggregate. The gradation requirements for ASTM No. 2 crushed aggregate subbase are presented in Table 6.

TABLE 6
Gradation Requirements for ASTM No. 2 Aggregate

Sieve Size	Percentage Passing Sieve
3 inch	100
2-1/2 inch	90-100
2 inch	35-70
1-1/2 inch	0-15
3/4 inch	0 -5

The No. 2 aggregate subbase course should be placed in lifts not exceeding 6 inches in loose thickness and compacted using a smooth-drum roller, operated in static (non-vibratory) mode. The subsequent course of No. 57 aggregate may be placed in one lift and should be compacted with a smooth-drum roller in vibratory mode with sufficient passes to create an unyielding surface. Placement and compaction of the permeable aggregate base and subbase should be performed under the observation of our field engineer. Following compaction of the No. 57 aggregate, the No. 8 bedding, not exceeding 2 inches in loose thickness, should be placed and screeded to a level, undisturbed surface immediately prior to paver installation.

The required thicknesses of the permeable aggregate base and subbase courses depends on the infiltration and water storage design requirements, as well as the traffic loading demand. Our recommendations for the minimum permeable ICP pavement section for pedestrian traffic are presented in Table 7.

TABLE 7
Recommended Pavement Sections for Permeable Interlocking Concrete Pavers

Pavement Type	ASTM No. 8 Bedding Aggregate (inches)	ASTM No. 57 Stone Base (inches)	ASTM No. 2 Stone Subbase (inches)
Pedestrian	1.5-2.0	4.0	6.0
Vehicular	1.5-2.0	4.0	10.0

The above recommended ICP pavement section is based on the ICPI technical guidelines (ICPI 2005). From a geotechnical standpoint, it is acceptable to design the pedestrian ICP section to exclude the No. 2 subbase course, in which case the No. 57 base course should be increased to 10 inches. From a geotechnical standpoint, it is also acceptable to use compacted structural planting mix in lieu of the No. 57 and No. 2 base courses in locations where the pedestrian ICP section is adjacent to tree wells and is required for promoting root growth. If either of these approaches are used, the perforated pipe should include a filter fabric sleeve to prevent the finer aggregate or organic material from entering the perforations.

7.5 Seismic Design

We understand the proposed buildings will be designed using the 2013 CBC. For design in accordance with the 2013 CBC, we recommend Site Class D be used. The latitude and longitude of the site are 37.68432 and -122.11197, respectively. Hence, in accordance with the 2013 CBC, we recommend the following:

- S_S = 2.306g, S_1 = 0.957g
- S_{MS} = 2.306g, S_{M1} = 1.436g
- S_{DS} = 1.537g, S_{D1} = 0.957g
- PGA_M = 0.886g
- Seismic Design Category D for Risk Categories I, II and III.

8.0 ADDITIONAL GEOTECHNICAL SERVICES

Prior to construction, Rockridge Geotechnical should review the project plans and specifications to verify that they conform to the intent of our recommendations. During construction, our field engineer should provide on-site observation and testing during site preparation, placement and compaction of fill, and installation of building foundations. These observations will allow us to compare actual with anticipated subsurface conditions and to verify that the contractor's work conforms to the geotechnical aspects of the plans and specifications.

9.0 LIMITATIONS

This geotechnical study has been conducted in accordance with the standard of care commonly used as state-of-practice in the profession. No other warranties are either expressed or implied. The recommendations made in this report are based on the assumption that the subsurface conditions do not deviate appreciably from those disclosed in the exploratory borings and CPTs. If any variations or undesirable conditions are encountered during construction, we should be notified so that additional recommendations can be made. The foundation recommendations presented in this report are developed exclusively for the proposed development described in this report and are not valid for other locations and construction in the project vicinity.

REFERENCES

Cao, T., Bryant, W. A., Rowshandel, B., Branum D. and Wills, C. J. (2003). The Revised 2002 California Probabilistic Seismic Hazard Maps.

California Division of Mines and Geology (1996). Probabilistic Seismic Hazard Assessment for the State of California, DMG Open-File Report 96-08.

California Geological Survey (2007). Fault-Rupture Hazard Zones in California, Special Publication 42, Interim Revision 2007.

California Geological Survey (2008). Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication 117.

California Geological Survey (2003). State of California Seismic Hazard Zones, Hayward Quadrangle, Official Map.

California Geological Survey (2003). State of California Seismic Hazard Zones, San Leandro Quadrangle, Official Map.

Jennings, C.W. (1994). Fault Activity Map of California and Adjacent Areas with Locations and Ages of Recent Volcanic Eruptions: California Division of Mines and Geology Geologic Data Map No. 6, scale 1: 750,000.

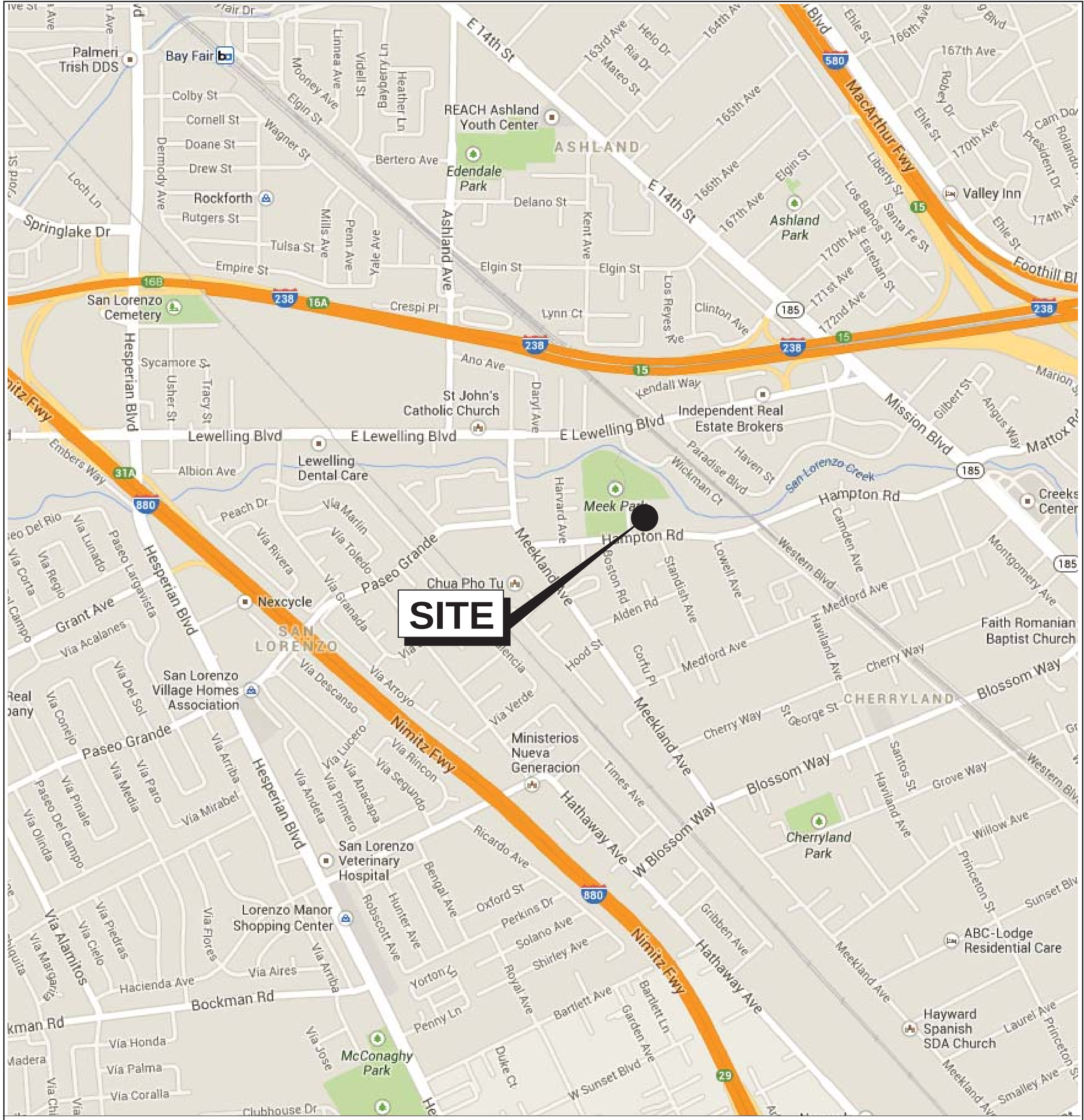
Robertson, P.K. (2009). “Performance based earthquake design using the CPT”, Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009.

Robertson, P.K. (2009). “Interpretation of Cone Penetration Tests - A Unified Approach”, Canadian Geotechnical Journal, Vol. 46, No. 11, pp 1337-1355.

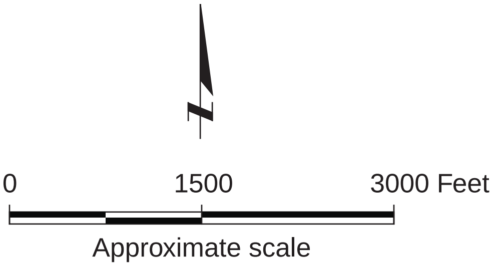
U.S. Geological Survey (2008). The Uniform California Earthquake Rupture Forecast, Version 2 (UCERF 2): prepared by the 2007 Working Group on California Earthquake Probabilities, U.S. Geological Survey Open File Report 2007-1437.

Zhang, G., Robertson. P.K., Brachman, R., (2002). “Estimating Liquefaction Induced Ground Settlements from the CPT”, Canadian Geotechnical Journal, 39: pp 1168-1180.

FIGURES



Base map: Google Map, 2013

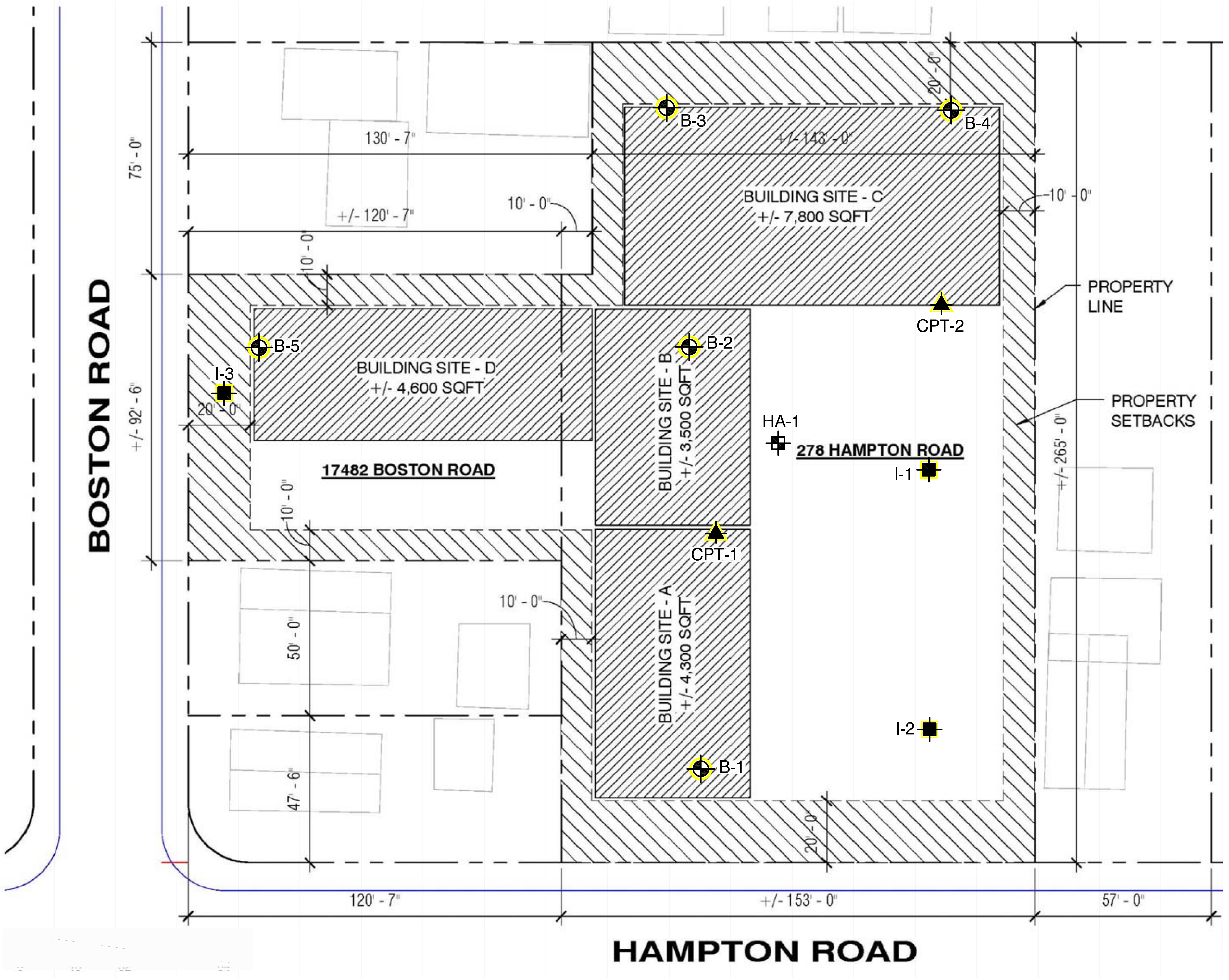


CHERRYLAND COMMUNITY CENTER
278 HAMPTON ROAD/17482 BOSTON ROAD
Cherryland, California

ROCKRIDGE
GEOTECHNICAL

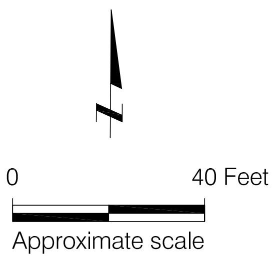
SITE LOCATION MAP

Date 12/18/13 | Project No. 13-590 | Figure 1



EXPLANATION

B-1 ⊕	Approximate location of boring by Rockridge Geotechnical, November 2013
CPT-1 ▲	Approximate location of cone penetration test by Rockridge Geotechnical, November 2013
HA-1 ⊞	Approximate location of sample for R-value and corrosivity tests
I-1 ■	Approximate location of infiltration test by Rockridge Geotechnical, March 2014
▨	Proposed building



CHERRYLAND COMMUNITY CENTER
278 HAMPTON ROAD/17482 BOSTON ROAD
Cherryland, California

SITE PLAN

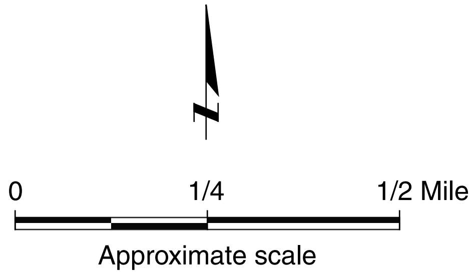
Date 04/03/14	Project No. 13-590	Figure 2

ROCKRIDGE GEOTECHNICAL

Reference: Sketch #ASK-01 (Draft) Cherryland Community Center, prepared by Noll & Tam Architects and Planners, dated September 5, 2013.

Base map: Geologic Map and Map Database of the Oakland Metropolitan Area, Alameda, Contra Costa, and San Francisco Counties, California, Graymer, 2000.

af	**Artifical fill (Historic)**
Qhaf	**Alluvial fan and fluvial deposits (Holocene)**
Qhl	**Natural levee deposits (Holocene)**



Approximate scale

CHERRYLAND COMMUNITY CENTER
278 HAMPTON ROAD/17482 BOSTON ROAD
Cherryland, California

ROCKRIDGE
GEOTECHNICAL

REGIONAL GEOLOGIC MAP

Date 12/15/13	Project No. 13-590	Figure 3

Base Map: U.S. Geological Survey, National Seismic Hazards Maps - Fault Sources, 2008.

EXPLANATION

🟥	Strike slip
⬛	Thrust (Reverse)
🟦	Normal

0 5 10 Miles

Approximate scale

CHERRYLAND COMMUNITY CENTER
278 HAMPTON ROAD/17482 BOSTON ROAD
Cherryland, California

ROCKRIDGE GEOTECHNICAL

REGIONAL FAULT MAP

Date 12/15/13 Project No. 13-590 Figure 4

EXPLANATION

🟩 **Liquefaction;** Areas where historic occurence of liquefaction, or local topographic, geological, geotechnical, and subsurface water conditions indicate a potential for permanent ground displacements.

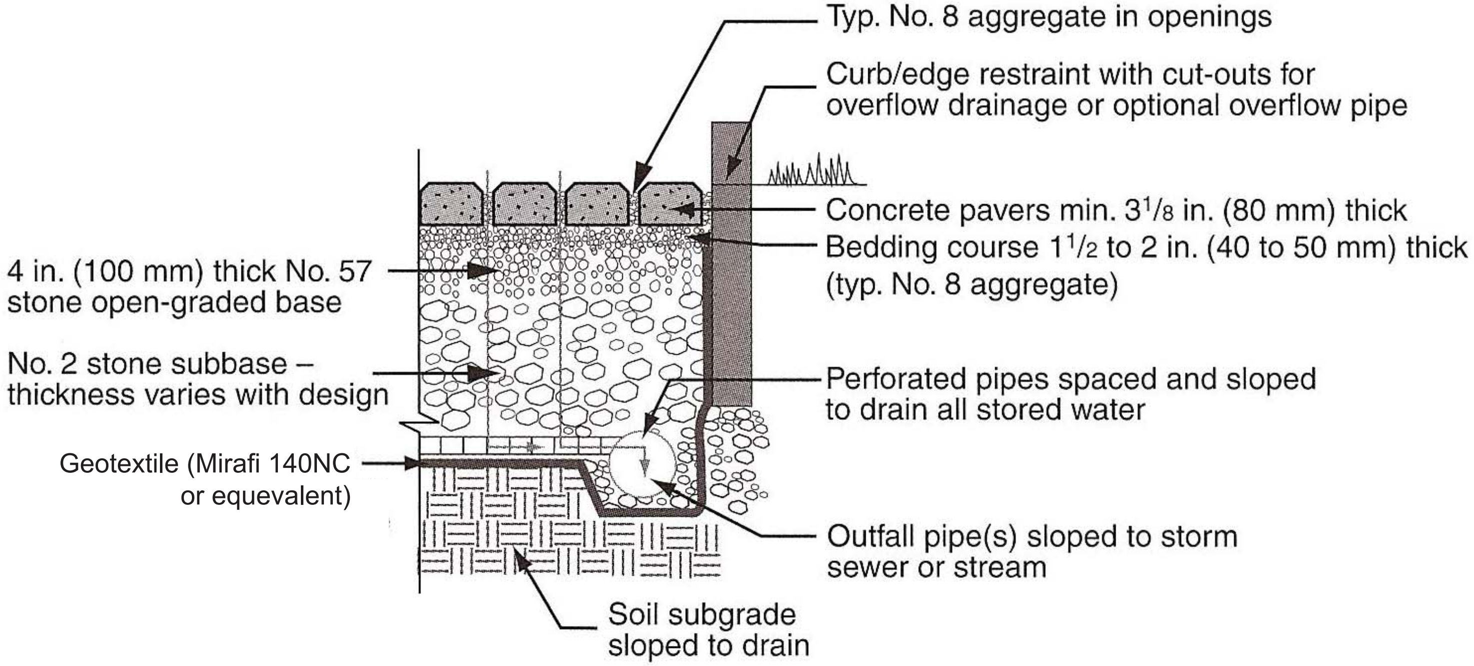
Reference:
State of California "Seismic Hazard Zones"
San Leandro and Hayward Quadrangles
Released on February 14, 2003 and July 2, 2003

CHERRYLAND COMMUNITY CENTER
278 HAMPTON ROAD/17482 BOSTON ROAD
Cherryland, California

ROCKRIDGE GEOTECHNICAL

SEISMIC HAZARDS ZONE MAP

Date 12/15/13 | Project No. 13-590 | Figure 5



Reference: "Permeable Interlocking Concrete Pavements", Third Edition, prepared by Interlocking Concrete Pavement Institute, dated 2005.

CHERRYLAND COMMUNITY CENTER
278 HAMPTON ROAD/17482 BOSTON ROAD
Cherryland, California

ROCKRIDGE
GEOTECHNICAL

GENERALIZED ICPI PERMEABLE PAVER DETAIL - PARTIAL EXFILTRATION

Date 12/17/13 | Project No. 13-590 | Figure 6

ROCKRIDGE
GEOTECHNICAL

APPENDIX A
Logs of Test Borings and Cone Penetration Tests

PROJECT: **CHERRYLAND COMMUNITY CENTER**
278 HAMPTON ROAD/17482 BOSTON ROAD
Cherryland, California

Log of Boring B-1

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Logged by: R. Ford

Date started: 11/20/13

Date finished: 11/20/13

Drilling method: 8" Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Safety (downhole)

Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES Sampler Type	Sample	Blows/ 6"	SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION		LABORATORY TEST DATA Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
						One-inch asphalt concrete							
1	S&H	■	8 6 6	5		SANDY SILT (ML) brown to light brown, medium stiff, slightly moist Collapse Test, see Figure B-1						13.5	82
2													
3	SPT	◩	3 3 3	4									
4	S&H	■	4 6 7	5							63	13.5	97
5					ML								
6													
7													
8													
9													
10						SAND (SP) yellow-brown, medium dense	LEVEE DEPOSITS						
11	S&H	■	9 11 12	10		CLAY with SAND (CL) brown to yellow-brown, stiff, moist, some gravel						11.3	107
12													
13													
14													
15													
16	SPT	◩	5 7 8	9	CL	medium plasticity, less sand and gravel						26.8	
17													
18													
19													
20													
21	SPT	◩	7 9 13	13		SANDY CLAY with GRAVEL (CL) dark gray to black, very stiff, moist, fine gravel						15.5	
22					CL								
23													
24						CLAY (CH) light brown, yellow-brown, light gray mottled, very stiff, moist	ALLUVIUM						
25					CH								
26	SPT	◩	6 9 12	13								23.6	
27													
28													
29													
30													

Boring terminated at a depth of 26.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

---

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.4 and 0.6, respectively to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 13-590

Figure: A-1

PROJECT: **CHERRYLAND COMMUNITY CENTER**
278 HAMPTON ROAD/17482 BOSTON ROAD
Cherryland, California

Log of Boring B-2

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2
Date started: 11/20/13
Date finished: 11/20/13
Drilling method: 8" Hollow Stem Auger
Hammer weight/drop: 140 lbs./30 inches
Hammer type: Safety (downhole)
Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)
Logged by: R. Ford

DEPTH (feet)	SAMPLES Sampler Type	SAMPLES Sample	SAMPLES Blows/ 6"	SAMPLES SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION		LABORATORY TEST DATA Type of Strength Test	LABORATORY TEST DATA Confining Pressure Lbs/Sq Ft	LABORATORY TEST DATA Shear Strength Lbs/Sq Ft	LABORATORY TEST DATA Fines %	LABORATORY TEST DATA Natural Moisture Content, %	LABORATORY TEST DATA Dry Density Lbs/Cu Ft
0–1						12 inches concrete fragments							
2	S&H		10 7 6	5	ML	SANDY SILT (ML) yellow-brown, medium stiff, slightly moist	LEVEE DEPOSITS				54	9.6	90
3	SPT		2 3 3	4									
5	S&H		4 4 4	3		Collapse Test, see Figure B-2						12.5	90
9					CL-SC	SANDY CLAY - CLAYEY SAND (CL-SC) dark yellow-brown, stiff/medium dense, moist, fine to medium sand							
11	S&H		10 11 12	10								16.0	110
15.3					CL	SANDY CLAY (CL) gray-brown to medium brown, very stiff, moist, fine-grained sand							
16	SPT		9 11 13	14									
19.3					SP	SAND (SP) yellow-brown, medium dense, dry, fine gained							
21	SPT		9 10 12	13	CL	SANDY CLAY with GRAVEL (CL) dark gray brown to black, very stiff, moist, fine gravel	ALLUVIUM						
25						yellow-brown, red-yellow, darker (trace) medium sand							
26	S&H		16 16 21	16	CH	CLAY (CH) light brown, yellow with brown, very stiff, moist, medium to high plasticity						19.0	110

Boring terminated at a depth of 26.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.4 and 0.6, respectively to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 13-590
Figure: A-2

PROJECT: **CHERRYLAND COMMUNITY CENTER**
278 HAMPTON ROAD/17482 BOSTON ROAD
Cherryland, California

Log of Boring B-3

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2
Date started: 11/20/13 Date finished: 11/20/13
Drilling method: 8" Hollow Stem Auger
Hammer weight/drop: 140 lbs./30 inches Hammer type: Safety (downhole)
Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)
Logged by: R. Ford

	SAMPLES							LABORATORY TEST DATA					
DEPTH (feet)	Sampler Type	Sample	Blows/ 6"	SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION		Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
						4 inches concrete							
1						SANDY SILT (ML) light brown to yellow-brown with trace black organics, stiff, dry, very fine grained							
2	S&H	■	11 14 17	13	ML							11.4	92
3	S&H	■	14 17 21	16									
4													
5	SPT	◩	7 7 7	8		SAND (SP) yellow-brown, medium dense, loose, dry to slightly moist, fine grained, charcoal fragments							
6													
7													
8					SP								
9							LEVEE DEPOSIT						
10													
11	S&H	■	11 18 26	18		SANDY CLAY (CL) yellowish brown to gray brown, very stiff, moist, fine sand, medium plasticity						11.3	107
12													
13													
14					CL								
15													
16	SPT	◩	7 7 8	9		SANDY CLAY (CL) gray-brown, stiff, moist							
17						SANDY CLAY with GRAVEL (CL) dark gray-brown, stiff, moist, low to medium plasticity							
18													
19													
20					CL								
21	S&H	■	9 11 16	11								15.3	117
22							ALLUVIUM						
23													
24						CLAY with SAND (CH) yellow-brown with light gray mottling, very stiff, moist, fine subrounded gravel (chert), medium plasticity							
25					CH								
26	SPT	◩	9 12 16	17								21.7	
27													
28													
29													
30													

Boring terminated at a depth of 26.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

---

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.4 and 0.6, respectively to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 13-590
Figure: A-3

ROCKRIDGE 13-590.GPJ TR.GDT 12/17/13

PROJECT: **CHERRYLAND COMMUNITY CENTER**
278 HAMPTON ROAD/17482 BOSTON ROAD
Cherryland, California

Log of Boring B-4

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2

Date started: 11/20/13 | Date finished: 11/20/13

Drilling method: 8" Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches | Hammer type: Safety (downhole)

Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

Logged by: R. Ford

DEPTH (feet)	SAMPLES: Sampler Type	Sample	Blows/ 6"	SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION		LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1	S&H	■	8 9 10	8	ML	SANDY SILT (ML) light brown to yellow brown, dry, medium dense, fine sand	LEVEE DEPOSITS				59	9.3	86
3	SPT	◪	6 6 7	8									
4	S&H	■	9 11 12	10		Collapse Test, see Figure B-3						11.3	98
7					SP	SAND (SP) yellow-brown, medium dense, slightly moist, fine grained							
11	SPT	◪	8 8 11	11								11.1	
15					CL	SANDY CLAY (CL) dark yellow-brown, stiff to very stiff, moist, fine to medium grained sand							
16	S&H	■	10 11 15	11								21.3	105
17					CL	SANDY CLAY (CL) dark gray-brown to dark, stiff to very stiff, moist, fine subangular to subrounded gravel	ALLUVIUM						
21	SPT	◪	8 8 9	10								15.3	
26	SPT	◪	11 14 16	18	CH	SANDY CLAY (CH) yellow-brown with light gray mottling, very stiff, moist, medium plasticity							

Boring terminated at a depth of 26.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

---

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.4 and 0.6, respectively to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 13-590

Figure: A-4

PROJECT: **CHERRYLAND COMMUNITY CENTER**
278 HAMPTON ROAD/17482 BOSTON ROAD
Cherryland, California

Log of Boring B-5

PAGE 1 OF 1

Boring location: See Site Plan, Figure 2
Date started: 11/20/13
Date finished: 11/20/13
Drilling method: 8" Hollow Stem Auger
Hammer weight/drop: 140 lbs./30 inches
Hammer type: Safety (downhole)
Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)
Logged by: R. Ford

DEPTH (feet)	SAMPLES Sampler Type	SAMPLES Sample	SAMPLES Blows/ 6"	SAMPLES SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION		LABORATORY TEST DATA Type of Strength Test	LABORATORY TEST DATA Confining Pressure Lbs/Sq Ft	LABORATORY TEST DATA Shear Strength Lbs/Sq Ft	LABORATORY TEST DATA Fines %	LABORATORY TEST DATA Natural Moisture Content, %	LABORATORY TEST DATA Dry Density Lbs/Cu Ft
1	S&H	▨	6 7 9	7		SANDY SILT (ML) light brown, medium stiff, dry to slightly moist, fine-grained sand						8.7	94
2													
3	SPT	◪	4 3 3	4									
4	S&H	▨										8.3	92
5					ML								
6													
7													
8							LEVEE DEPOSITS						
9													
10						SANDY CLAY (CL) dark yellow-brown, stiff, moist, fine sand							
11	SPT	◪	5 9 6	9								12.3	
12													
13					CL								
14													
15													
16	SPT	◪	7 8 8	10		SANDY CLAY (CL) gray-brown dark yellow-brown, stiff, moist							
17					CL								
18													
19													
20					SC	CLAYEY SAND (SC) olive-brown, loose, moist, fine to medium gravel							
21	SPT	◪	5 6 7	8		SANDY CLAY (CL) dark gray brown, stiff, moist, medium sand	ALLUVIUM					21.9	
22													
23					CL								
24													
25						SANDY CLAY (CH) light brown, yellow-brown, light gray mottled, very stiff, moist, medium to high plasticity							
26	SPT	◪	12 13 16	17	CH								
27													
28													
29													
30													

Boring terminated at a depth of 26.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

---

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.4 and 0.6, respectively to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 13-590

Figure: A-5

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		Symbols	Typical Names
Coarse-Grained Soils (more than half of soil > no. 200 sieve size	**Gravels** (More than half of coarse fraction > no. 4 sieve size)	**GW**	Well-graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	Sands (More than half of coarse fraction < no. 4 sieve size)	**SW**	Well-graded sands or gravelly sands, little or no fines
		SP	Poorly-graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
Fine -Grained Soils (more than half of soil < no. 200 sieve size)	**Silts and Clays** LL = < 50	**ML**	Inorganic silts and clayey silts of low plasticity, sandy silts, gravelly silts
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
		OL	Organic silts and organic silt-clays of low plasticity
	Silts and Clays LL = > 50	**MH**	Inorganic silts of high plasticity
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic silts and clays of high plasticity
Highly Organic Soils		**PT**	Peat and other highly organic soils

GRAIN SIZE CHART

Classification	Range of Grain Sizes	
	U.S. Standard Sieve Size	**Grain Size in Millimeters**
Boulders	Above 12"	Above 305
Cobbles	12" to 3"	305 to 76.2
Gravel	3" to No. 4	76.2 to 4.76
coarse	3" to 3/4"	76.2 to 19.1
fine	3/4" to No. 4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.075
coarse	No. 4 to No. 10	4.76 to 2.00
medium	No. 10 to No. 40	2.00 to 0.420
fine	No. 40 to No. 200	0.420 to 0.075
Silt and Clay	Below No. 200	Below 0.075

▽ Unstabilized groundwater level

▼ Stabilized groundwater level

SAMPLE DESIGNATIONS/SYMBOLS

⬒	Sample taken with Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter. Darkened area indicates soil recovered
◩	Classification sample taken with Standard Penetration Test sampler
◨	Undisturbed sample taken with thin-walled tube
☒	Disturbed sample
⊙	Sampling attempted with no recovery
◫	Core sample
◉	Analytical laboratory sample
▥	Sample taken with Direct Push sampler
▥	Sonic

SAMPLER TYPE

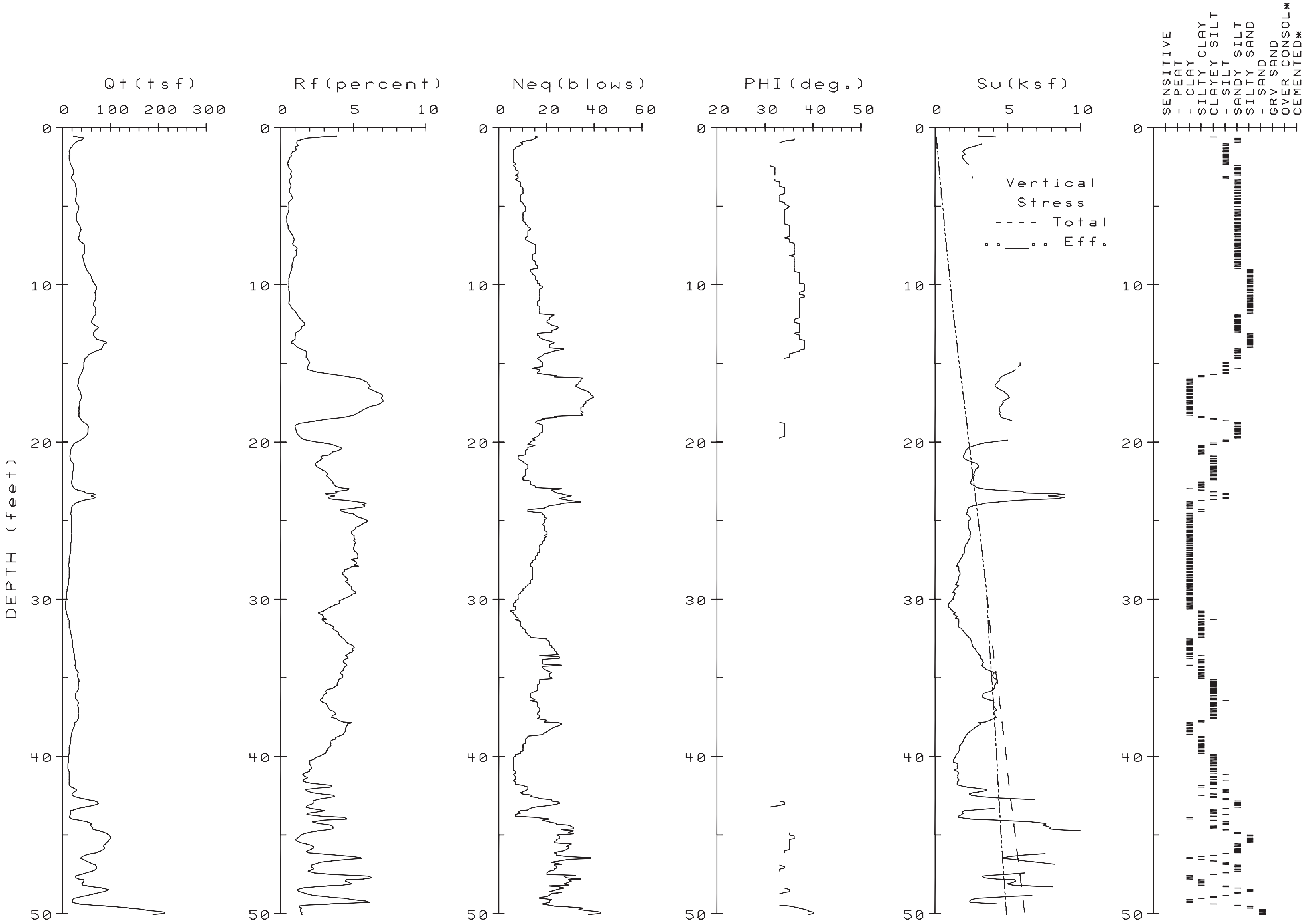
C	Core barrel
CA	California split-barrel sampler with 2.5-inch outside diameter and a 1.93-inch inside diameter
D&M	Dames & Moore piston sampler using 2.5-inch outside diameter, thin-walled tube
O	Osterberg piston sampler using 3.0-inch outside diameter, thin-walled Shelby tube
PT	Pitcher tube sampler using 3.0-inch outside diameter, thin-walled Shelby tube
S&H	Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter
SPT	Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and a 1.5-inch inside diameter
ST	Shelby Tube (3.0-inch outside diameter, thin-walled tube) advanced with hydraulic pressure

CHERRYLAND COMMUNITY CENTER
278 HAMPTON ROAD/17482 BOSTON ROAD
Cherryland, California

ROCKRIDGE
GEOTECHNICAL

CLASSIFICATION CHART

Date 12/15/13 | Project No. 13-590 | Figure A-6



Terminated at 50.0 feet

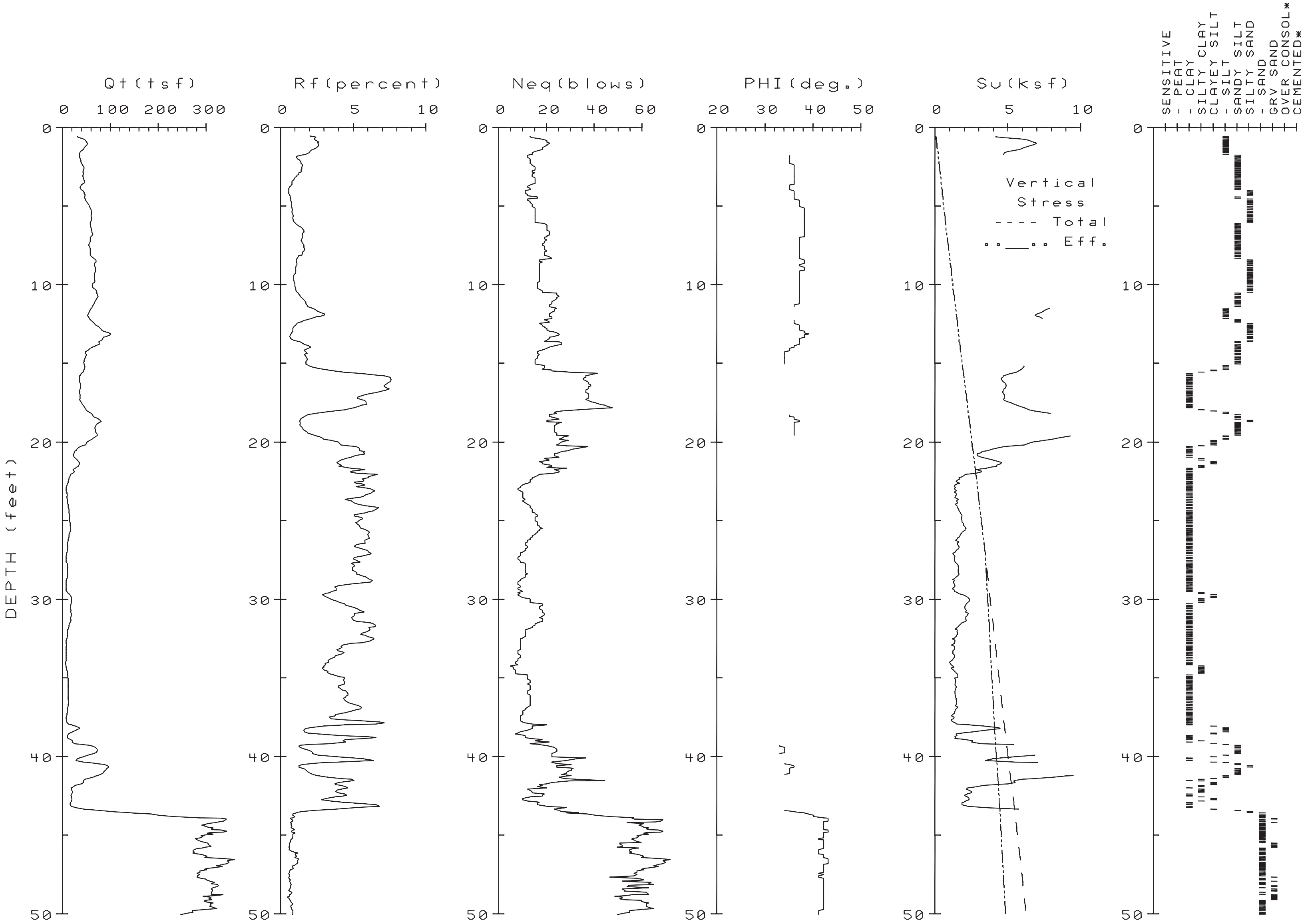
Groundwater measured at 29.7 feet

CHERRYLAND COMMUNITY CENTER
278 HAMPTON ROAD/17482 BASTON ROAD
Cherryland, California

ROCKRIDGE
GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-1

Date 12/15/13	Project No. 13-590	Figure A-7



Terminated at 50.0 feet

Groundwater measured at 27.2 feet

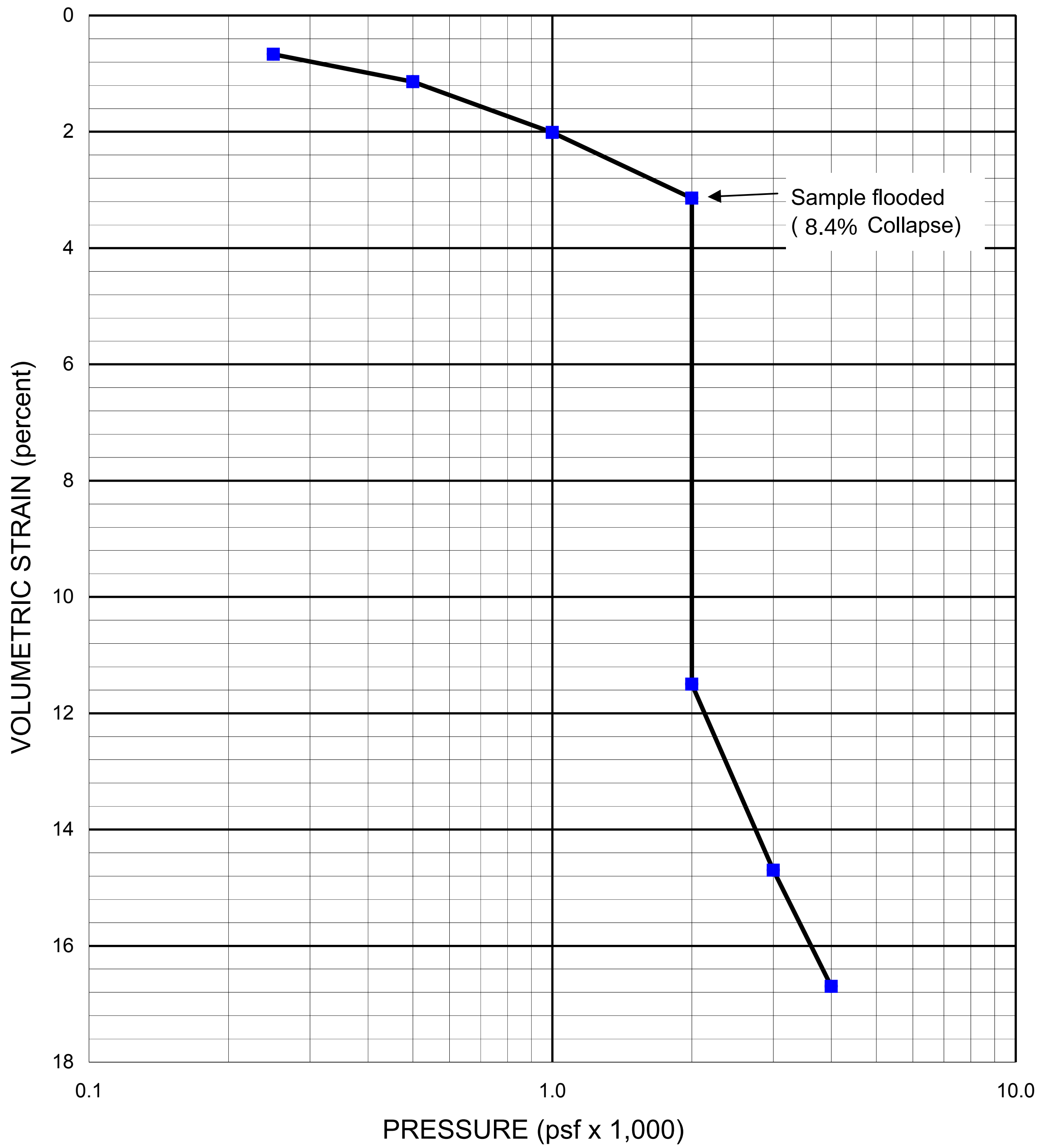
CHERRYLAND COMMUNITY CENTER
278 HAMPTON ROAD/17482 BASTON ROAD
Cherryland, California

ROCKRIDGE
GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-2

Date 12/15/13	Project No. 13-590	Figure A-8

APPENDIX B
Laboratory Test Data



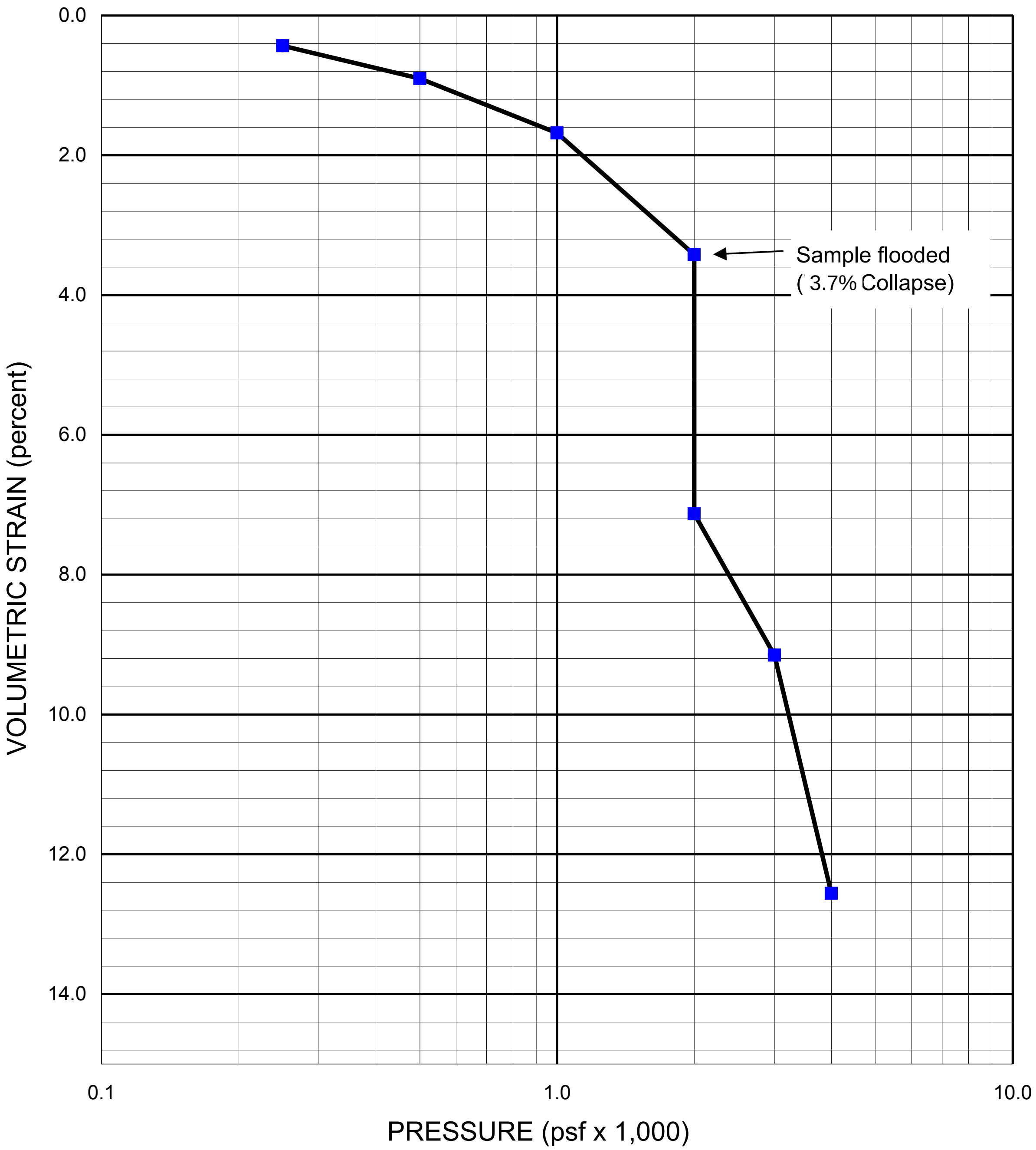
Sampler Type: Mod Cal			Condition	Before Test			After Test	
Diameter (in) 2.42	Height (in) 1.00		Water Content	w_o	13.5 %		w_f	23.4 %
Boring #: B-1			Void Ratio	e_o	1.06		e_f	0.72
Sample #: 1			Saturation	S_o	36 %		S_f	88 %
Depth: 1.3 ft.			Dry Density	γ_d	82 pcf		γ_d	98 pcf
	LL	PL	PI			G_s 2.70 (assumed)		
Description: SANDY SILT (ML), brown to light brwon								

CHERRYLAND COMMUNITY CENTER
278 HAMPTON ROAD/17482 BOSTON ROAD
Cherryland, California

ROCKRIDGE GEOTECHNICAL

COLLAPSE TEST REPORT

Date 12/11/13 Project No. 13-590 Figure B-1



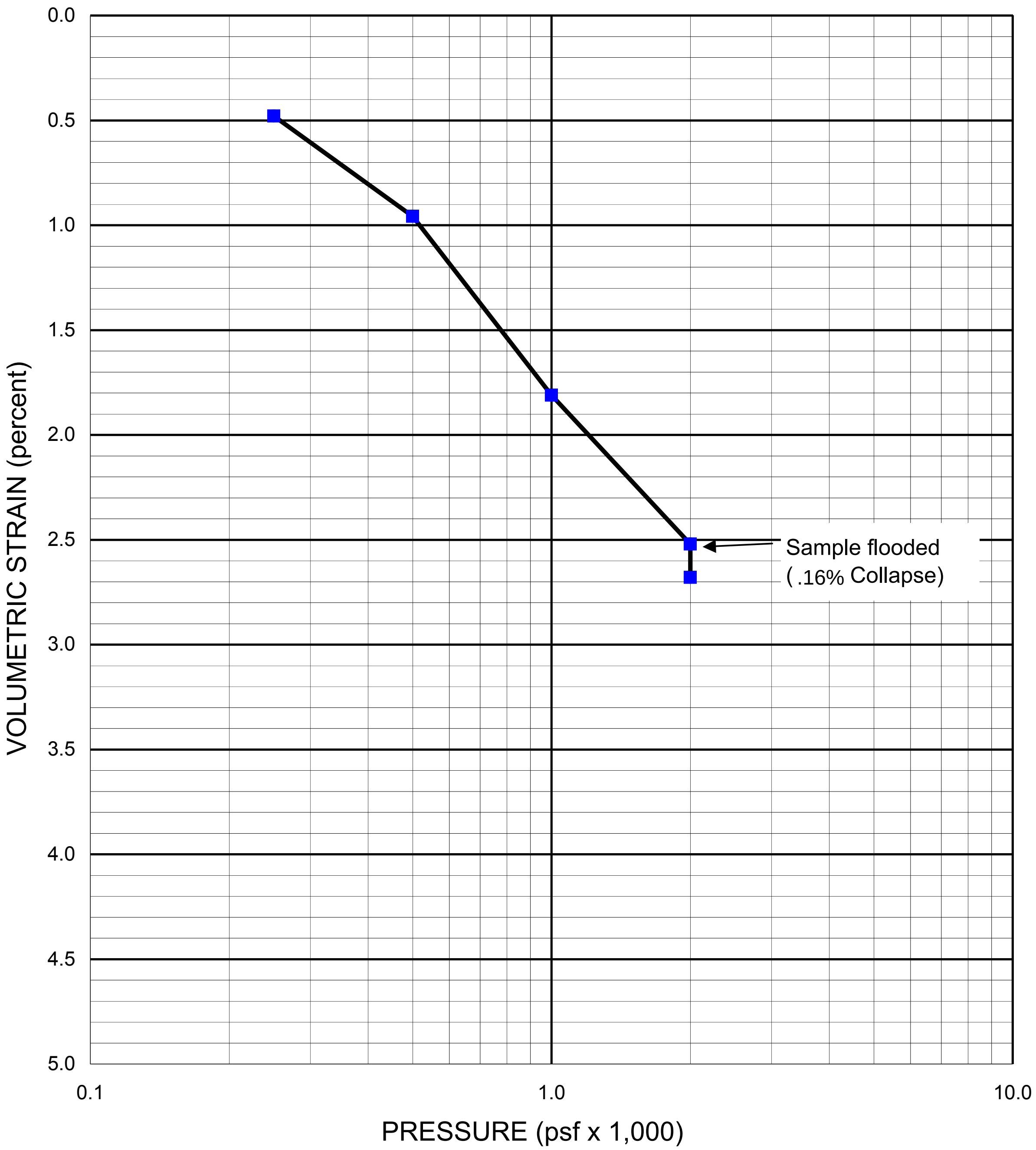
Sampler Type:	Mod Cal			Condition	Before Test			After Test	
Diameter (in)	2.42	Height (in)	1.00	Water Content	w_o	12.5 %		w_f	21.9 %
Boring #:	B-2			Void Ratio	e_o	0.88		e_f	0.65
Sample #:	3			Saturation	S_o	38 %		S_f	92 %
Depth:	4.5 ft.			Dry Density	γ_d	90 pcf		γ_d	103 pcf
		LL		PL	PI		G_s	2.70	(assumed)
Description:	SANDY SILT (ML), yellow-brown								

CHERRYLAND COMMUNITY CENTER
278 HAMPTON ROAD/17482 BOSTON ROAD
Cherryland, California

ROCKRIDGE
GEOTECHNICAL

COLLAPSE TEST REPORT

Date 12/10/13 Project No. 13-590 Figure B-2



Sampler Type:	Mod Cal			Condition	Before Test			After Test	
Diameter (in)	2.42	Height (in)	1.00	Water Content	w_o	11.3 %	w_f	23.0 %	
Boring #:	B-4			Void Ratio	e_o	0.72	e_f	0.68	
Sample #:	3			Saturation	S_o	42 %	S_f	92 %	
Depth:	3.8 ft.			Dry Density	γ_d	98 pcf	γ_d	101 pcf	
		LL		PL		PI		G_s	2.70 (assumed)

Description: SANDY SILT (ML), light brown to yellow-brown

CHERRYLAND COMMUNITY CENTER
278 HAMPTON ROAD/17482 BOSTON ROAD
Cherryland, California

ROCKRIDGE GEOTECHNICAL

COLLAPSE TEST REPORT

Date 12/10/13 Project No. 13-590 Figure B-3

B. HILLEBRANDT SOILS TESTING, INC.

29 Sugarloaf Terrace, Alamo, CA 94507 - Tel: (510) 409-2916 - Fax: (925) 891-9267 - Email: soiltesting@aol.com

LAB RESULTS SUMMARY FORM

Project Number: 13-590 **Project Name:** 278 Hampton **Results Due By:**
Requested By: CSS **Request Date:** 12/6/2013 **Throw Samples Out On:**

					Atterberg			-200			Compaction				
Boring #	Sample Depth (feet)	Dry Density (pcf)	Moisture Content (%)	% Collapse @ 2000 psf	Liquid Limit	Plastic Limit	Plasicity Index	Passing #4 Sieve (%)	Passing #40 sieve (%)	Passing #200 sieve (%)	Maximum Dry Density (pcf)	Optimum Moisture (%)	Pocket Penetrometer (tsf)	Torvane (tsf)	Remarks
B-1	1.3	82	14	11.5											
B-1	3.9	97	14					100	100	63					
B-1	11.0	99	16												
B-1	15.0 - 16.5		27												
B-1	20.0 - 21.5		16												
B-1	25.0 - 26.5		24												
B-2	2.0	90	10					100	99	54					
B-2	4.5	90	13	7.1											
B-2	10.7	110	16												
B-2	26.0	110	19												
B-3	2.0	92	11												
B-3	10.5	107	11												
B-3	21.0	117	15												
B-3	25.0 - 26.5		22												
B-4	1.2	86	9					100	98	59					
B-4	3.8	98	11	2.7											
B-4	10.0 - 11.5		11												
B-4	16.0	105	21												
B-4	20.0 - 21.5		15												
B-5	1.2	94	9												
B-5	4.2	92	8												
B-5	10.0 - 11.5		12												
B-5	20.0 - 21.5		22												

B. HILLEBRANDT SOILS TESTING, INC.

29 Sugarloaf Terrace, Alamo, CA 94507 - Tel: (510) 409-2916 - Fax: (925) 891-9267 - Email: soiltesting@aol.com

MOISTURE CONTENT/DRY DENSITY

Job #: 13-590
Job Name: 278 Hampton
Date: 12/6/2013
Tested by: Brad Hillebrandt

Additional Tests:	-200		-200			
Boring #:	B-1	B-1	B-2	B-2	B-2	B-3
Depth:	3.9	11.0	2.0	10.7	26.0	2.0
Sample Description:	Brown sandy SILT	Upper 3": Yellowish brown poorly graded SAND Bottom 3": Brown CLAY with some sand	Brown sandy SILT	Brown sandy CLAY	Yellowish brown sandy CLAY	Brown sandy SILT
Can #:	308	368	361	304	302	306
Wet Sample + can	301.8	392.8	290.3	374.9	429.9	302.8
Dry Sample + can	270.4	344.0	267.8	328.5	367.3	275.7
Weight can	38.1	36.1	34.4	38.4	37.5	37.5
Weight water	31.4	48.8	22.5	46.4	62.6	27.1
Weight Dry Sample	232.3	307.9	233.4	290.1	329.8	238.2
WATER CONTENT (%)	**13.5%**	**15.8%**	**9.6%**	**16.0%**	**19.0%**	**11.4%**
Weight Sample + Liner	1045.6	985.8	913.6	1128.4	1145.2	885.5
Weight Liner	256.3	205.2	206.4	210.4	205.8	198.8
Sample Length	6.0	5.7	6.0	6.0	6.0	5.6
Sample Diameter	2.41	2.41	2.41	2.41	2.41	2.41
DRY DENSITY (pcf)	**96.8**	**98.7**	**89.8**	**110.2**	**109.9**	**91.9**

B. HILLEBRANDT SOILS TESTING, INC.

29 Sugarloaf Terrace, Alamo, CA 94507 - Tel: (510) 409-2916 - Fax: (925) 891-9267 - Email: soiltesting@aol.com

MOISTURE CONTENT/DRY DENSITY

Job #: 13-590
Job Name: 278 Hampton
Date: 12/6/2013
Tested by: Brad Hillebrandt

Additional Tests:			-200			
Boring #:	B-3	B-3	B-4	B-4	B-5	B-5
Depth:	10.5	21.0	1.2	16.0	1.2	4.2
Sample Description:	Yellowish brown sandy CLAY	Dark brownish gray sandy CLAY with some fine gravel	Yellowish brown sandy CLAY	Brown sandy CLAY	Brown sandy SILT	Brown sandy SILT
Can #:	301	331	326	310	342	354
Wet Sample + can	343.5	264.7	266.3	357.1	294.6	309.2
Dry Sample + can	312.4	234.6	247.0	301.0	274.2	288.0
Weight can	38.3	37.8	38.7	38.0	40.1	33.6
Weight water	31.1	30.1	19.3	56.1	20.4	21.2
Weight Dry Sample	274.1	196.8	208.3	263	234.1	254.4
WATER CONTENT (%)	**11.3%**	**15.3%**	**9.3%**	**21.3%**	**8.7%**	**8.3%**
Weight Sample + Liner	1060.4	1148.5	878.6	1124.3	941.0	927.8
Weight Liner	206.9	207.9	206.9	208.7	209.1	209.9
Sample Length	6.0	5.85	6.0	6.0	6.0	6.0
Sample Diameter	2.41	2.41	2.41	2.41	2.41	2.41
DRY DENSITY (pcf)	**106.7**	**116.5**	**85.6**	**105.0**	**93.7**	**92.2**

B. HILLEBRANDT SOILS TESTING, INC.

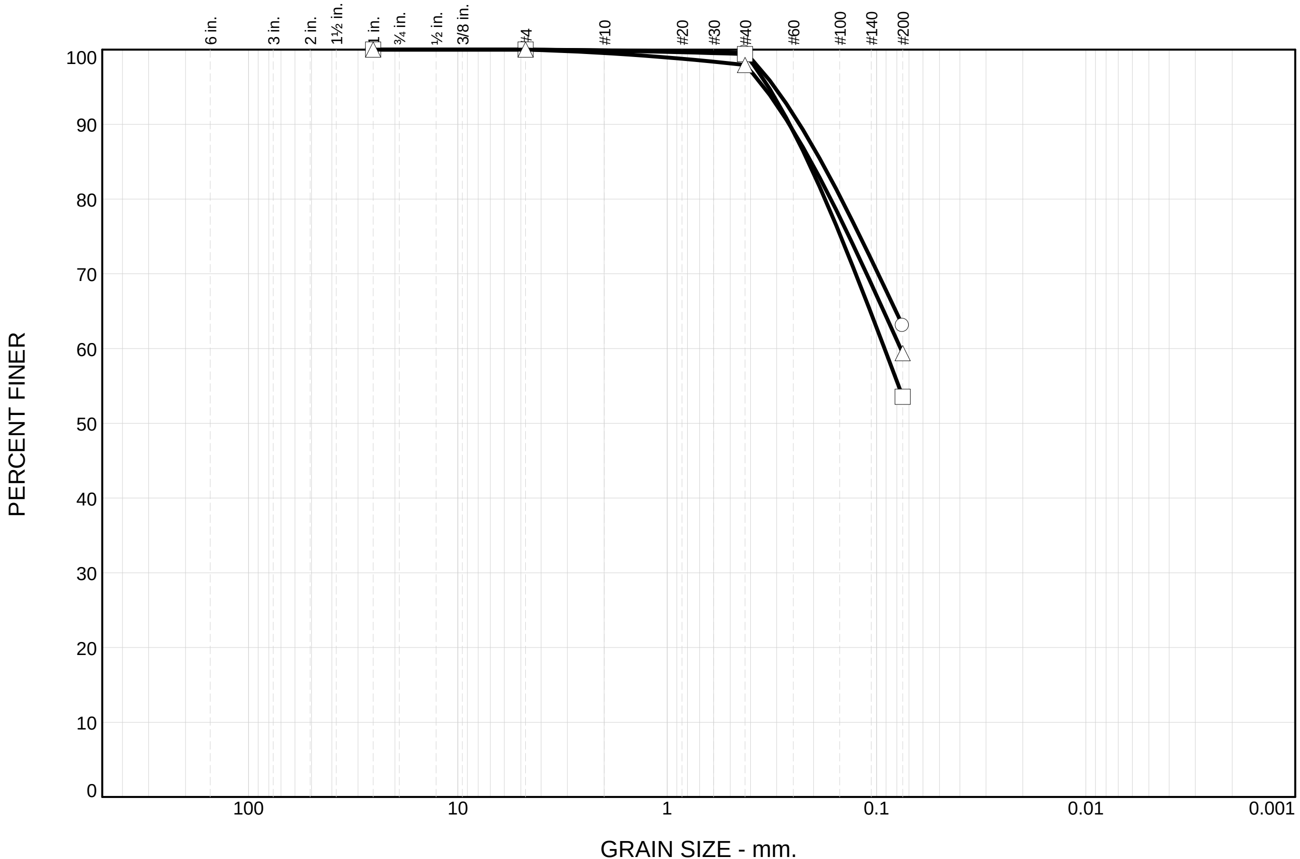
29 Sugarloaf Terrace, Alamo, CA 94507 - Tel: (510) 409-2916 - Fax: (925) 891-9267 - Email: soiltesting@aol.com

MOISTURE CONTENT WORKSHEET

Job #: 13-590
Job Name: 278 Hampton
Date: 12/6/2013
Tested by: B. Hillebrandt

Additional Tests:									
Boring #:	B-1	B-1	B-1	B-3	B-4	B-4	B-5	B=5	
Depth:	15.0 - 16.5	20.0 - 21.5	25.0 - 26.5	25.0 - 26.5	10.0 - 11.5	20.0 - 21.5	10.0 - 11.5	20.0 - 21.5	
Sample Description:	Brown CLAY	Brown sandy CLAY with some gravel	Dark yellowish brown CLAY	Olive brown CLAY with sand	Yellowish brown clayey SAND	Black gravelly sandy CLAY	Brown sandy CLAY	Olive brown clayey SAND	
Can #:	339	346	321	352	340	332	348	367	
Wet Sample + can	303.7	290.9	278.3	232.9	233.1	289.2	236.5	258.8	
Dry Sample + can	247.5	256.9	232.5	197.2	213.6	256.0	214.8	218.4	
Weight can	37.7	38.2	38.7	32.6	37.8	38.3	38.1	34.0	
Weight water	56.2	34	45.8	35.7	19.5	33.2	21.7	40.4	
Weight Dry Sample	209.8	218.7	193.8	164.6	175.8	217.7	176.7	184.4	
WATER CONTENT (%)	**26.8%**	**15.5%**	**23.6%**	**21.7%**	**11.1%**	**15.3%**	**12.3%**	**21.9%**	

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.1	0.3	36.5	63.1	
□	0.0	0.0	0.0	0.1	0.5	45.8	53.6	
△	0.0	0.0	0.0	0.5	1.6	38.5	59.4	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	B-1		3.9'	Brown sandy SILT	ML
□	B-2		2.0'	Brown sandy SILT	ML
△	B-4		1.2	Yellowish brown sandy CLAY	ML

B. HILLEBRANDT SOILS TESTING, INC.
+1 510-409-2816
SoilTesting@aol.com

Client: Rockridge Geotechnical
Project: 278 Hampton

Project No.: 13-590 **Figure**

Tested By: BH

GRAIN SIZE DISTRIBUTION TEST DATA

12/13/2013

Client: Rockridge Geotechnical
Project: 278 Hampton
Project Number: 13-590
Location: B-1
Depth: 3.9'
Material Description: Brown sandy SILT
USCS: ML
Tested by: BH

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
270.40	38.10	1"	0.00	0.00	100.0
		#4	31.00	31.00	100.0
		#40	32.00	31.00	99.6
		#200	115.80	31.00	63.1

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.1	0.3	36.5	36.9			63.1

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
						0.1473	0.1833	0.2329	0.3069

Fineness Modulus
0.26

GRAIN SIZE DISTRIBUTION TEST DATA

12/13/2013

Client: Rockridge Geotechnical
Project: 278 Hampton
Project Number: 13-590
Location: B-2
Depth: 2.0'
Material Description: Brown sandy SILT
USCS: ML
Tested by: BH

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
267.80	34.40	1"	0.00	0.00	100.0
		#4	31.00	31.00	100.0
		#40	32.40	31.00	99.4
		#200	138.00	31.00	53.6

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.1	0.5	45.8	46.4			53.6

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
					0.0915	0.1762	0.2120	0.2597	0.3282

Fineness Modulus
0.32

GRAIN SIZE DISTRIBUTION TEST DATA

12/13/2013

Client: Rockridge Geotechnical
Project: 278 Hampton
Project Number: 13-590
Location: B-4
Depth: 1.2
Material Description: Yellowish brown sandy CLAY
USCS: ML
Tested by: BH

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer
247.00	38.70	1"	0.00	0.00	100.0
		#4	31.00	31.00	100.0
		#40	35.30	31.00	97.9
		#200	111.30	31.00	59.4

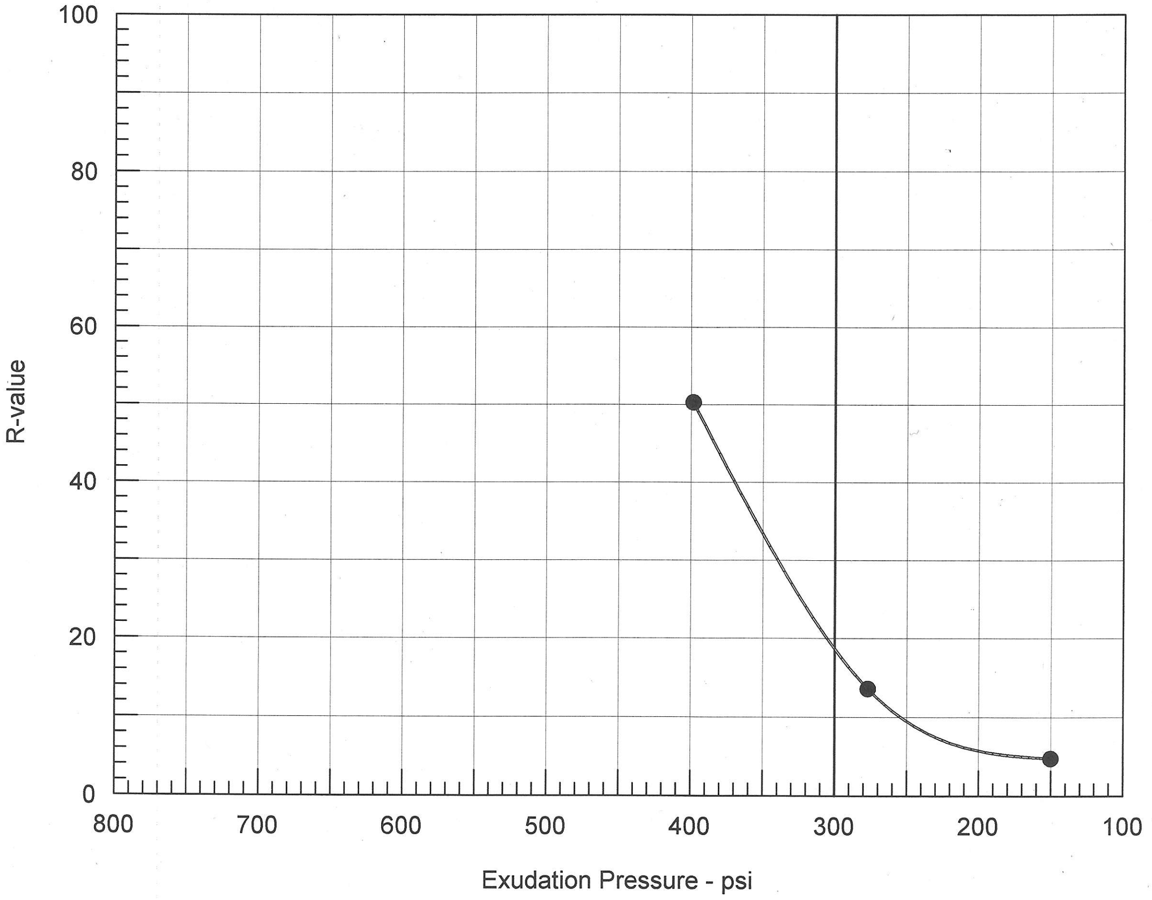
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.5	1.6	38.5	40.6			59.4

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
					0.0767	0.1655	0.2054	0.2609	0.3457

Fineness Modulus
0.33

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	200	121.2	13.0	0.00	143	2.58	150	5	5
2	300	114.4	11.0	0.00	61	2.59	398	48	50
3	330	121.9	12.0	0.00	120	2.52	277	14	14

Test Results	Material Description
R-value at 300 psi exudation pressure = 19	Clayey Dark Brown Silt

Project No.: 113684C

Project: 13-590, Cherryland Community Center

Source of Sample: Native

Sample Number: 1

Date: 10/9/2013

Tested by: D. Shuemake

Checked by: M. Faiyaz

Remarks:

R-VALUE TEST REPORT

APPLIED MATERIALS & ENGINEERING, INC.

Figure ______

Sunland Analytical
11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 10/09/2013
Date Submitted 10/03/2013

To: Craig Shield
Rockridge Geotechnical, Inc.
270 Grand Ave
Oakland, CA 94610

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 13-590 CHERRYLAND Site ID : HA-1 #1 3.0FT.
Thank you for your business.

* For future reference to this analysis please use SUN # 65671-135962.

EVALUATION FOR SOIL CORROSION

Soil pH	6.34		
Moisture	9.5 %		
Minimum Resistivity	1.23 ohm-cm (x1000)		
Chloride	11.2 ppm	00.00112	%
Sulfate	140.2 ppm	00.01402	%
Redox Potential	(+) 176 mv		

Sulfate Reducing Bacteria Presence - NEGATIVE

METHODS
pH and Min.Resistivity CA DOT Test #643 Mod.(Sm.Cell)
Sulfate CA DOT Test #417, Chloride CA DOT Test #422
Redox Potential ASTM D1498m, Sulfate Reducing Bacteria AWWA C105-72

Sunland Analytical
11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 10/09/2013
Date Submitted 10/03/2013

To: Craig Shield
Rockridge Geotechnical, Inc.
270 Grand Ave
Oakland, CA 94610

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following:
Location : 13-590 CHERRYLAND Site ID : HA-1 #1 3.0FT.
Thank you for your business.

* For future reference to this analysis please use SUN # 65671-135962.

Extractable Sulfide Analysis

TYPE OF TEST	RESULTS	UNITS
Sulfide	ND	mg/kg

DETECTION LIMITS
Sulfide 0.05

Method 9031m, ND = Below Detection Limits

APPENDIX C
Results of Liquefaction Analyses

Rockridge Geotechnical, Inc.
270 Grand Avenue
Oakland, CA 94610

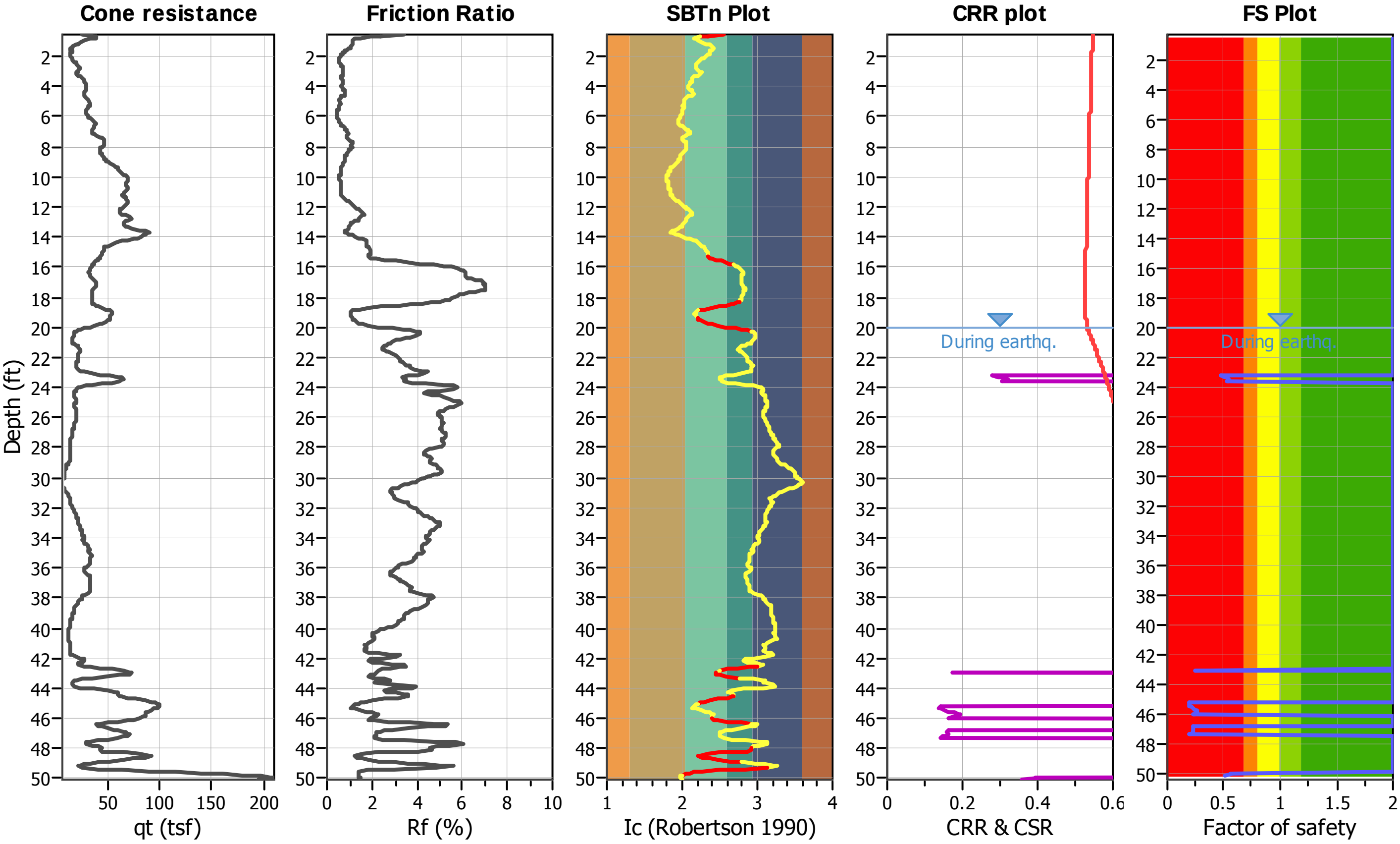
LIQUEFACTION ANALYSIS REPORT

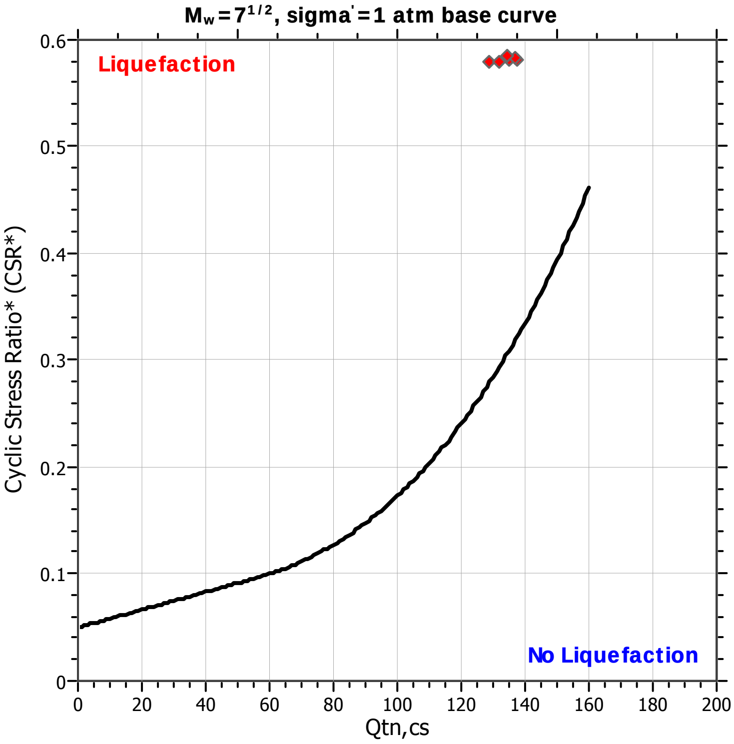
Project title : Cherryland Community Center **Location : Cherryland, CA**

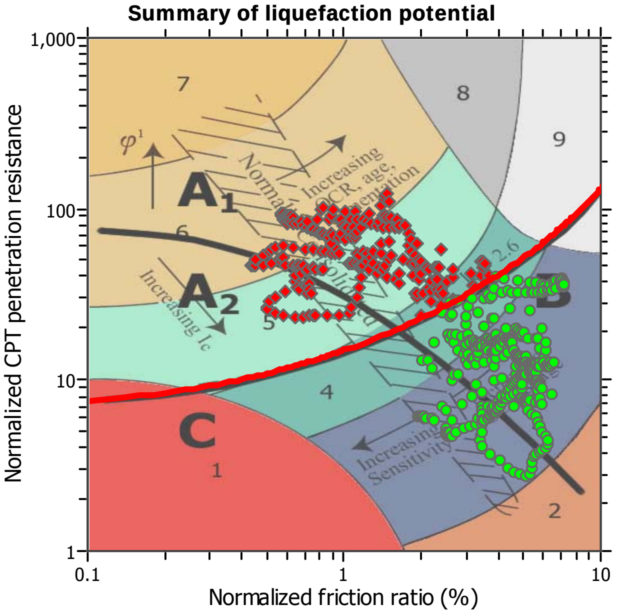
CPT file : CHERRY-1

Input parameters and analysis data

Analysis method:	NCEER (1998)	G.W.T. (in-situ):	29.70 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	20.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	7.33	Ic cut-off value:	2.60	Trans. detect. applied:	Yes		
Peak ground acceleration:	0.89	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		Method

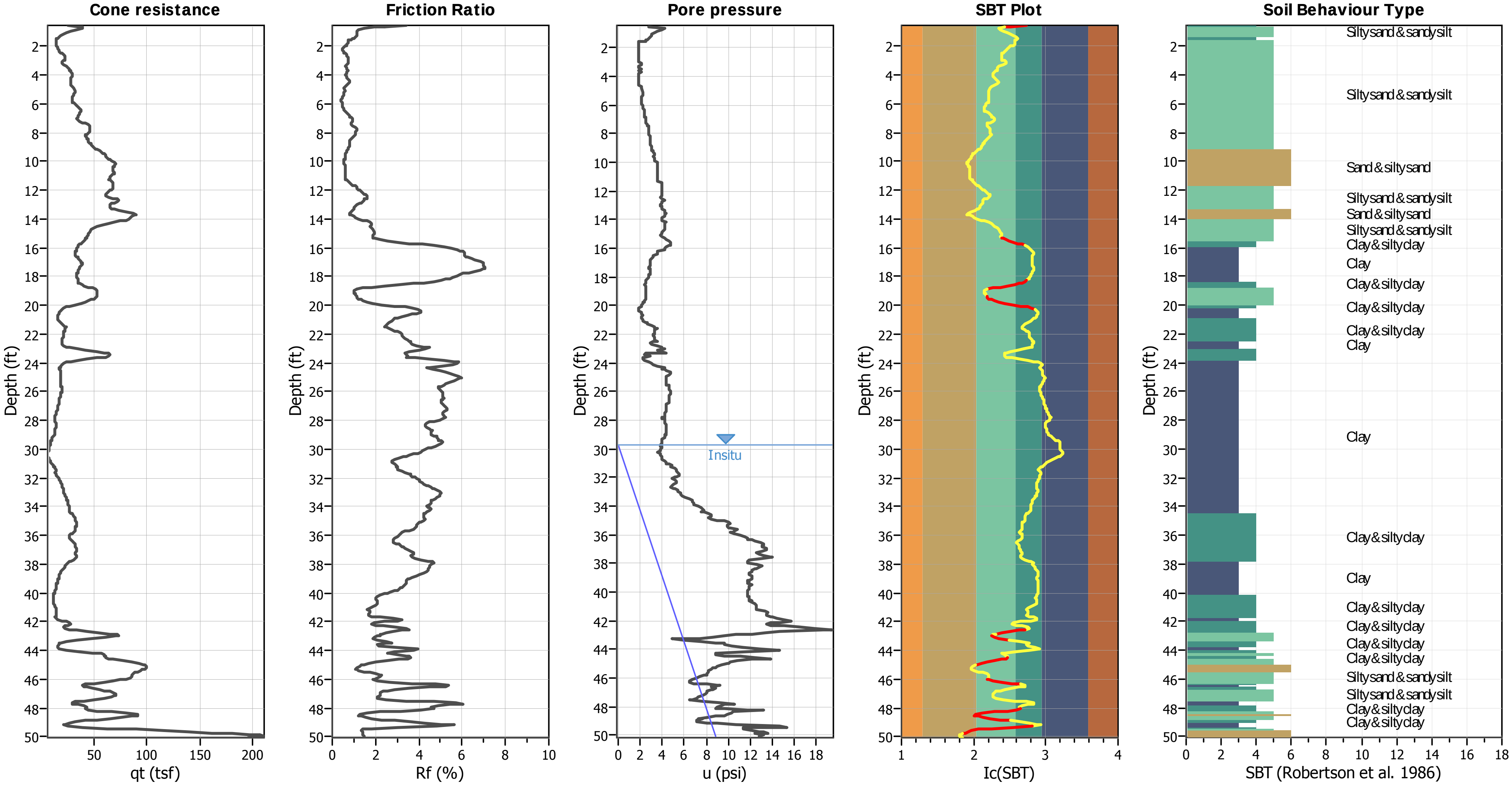






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



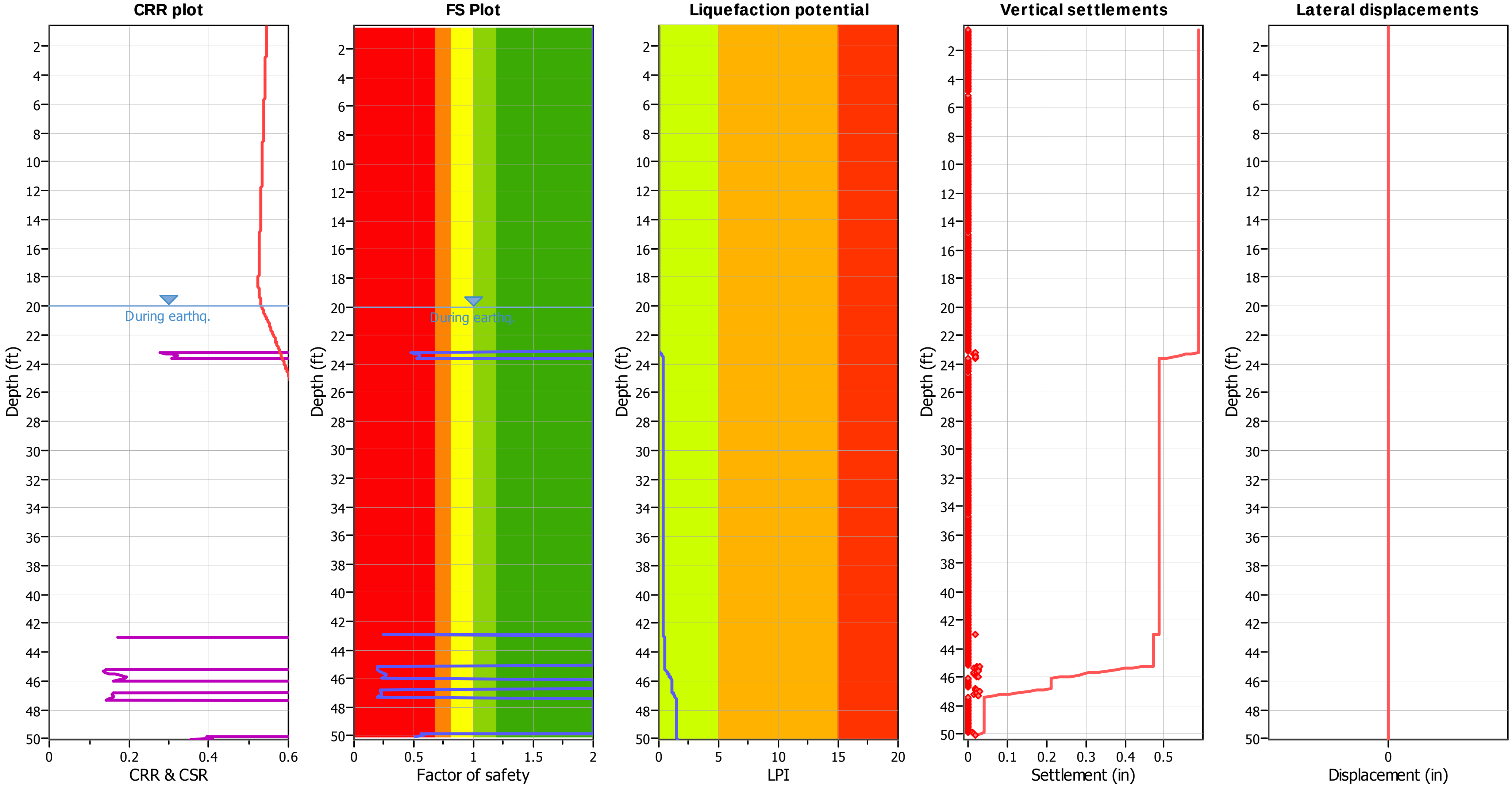
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.33	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.89	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	29.70 ft	Fill height:	N/A	Limit depth:	N/A

SBT legend

- 🟥 1. Sensitive fine grained
- 🟫 2. Organic material
- 🟦 3. Clay to silty clay
- 🟩 4. Clayey silt to silty
- 🟩 5. Silty sand to sandy silt
- 🟨 6. Clean sand to silty sand
- 🟧 7. Gravely sand to sand
- ⬛ 8. Very stiff sand to
- ⬜ 9. Very stiff fine grained

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.33	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.89	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	29.70 ft	Fill height:	N/A	Limit depth:	N/A

F.S. color scheme

- 🟥 Almost certain it will liquefy
- 🟧 Very likely to liquefy
- 🟨 Liquefaction and no liquefaction are equally likely
- 🟩 Unlike to liquefy
- 🟩 Almost certain it will not liquefy

LPI color scheme

- 🟥 Very high risk
- 🟧 High risk
- 🟨 Low risk

ROCKRIDGE GEOTECHNICAL

Rockridge Geotechnical, Inc.
270 Grand Avenue
Oakland, CA 94610

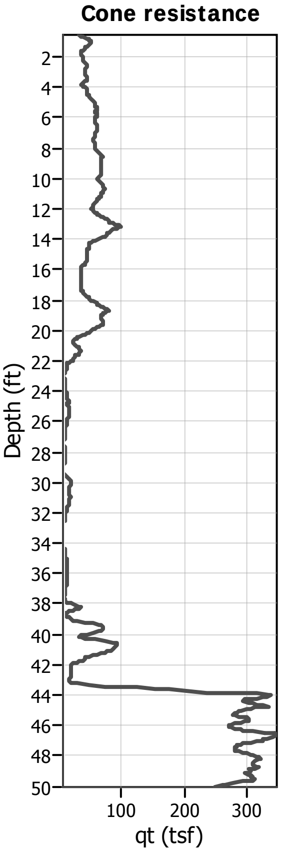
LIQUEFACTION ANALYSIS REPORT

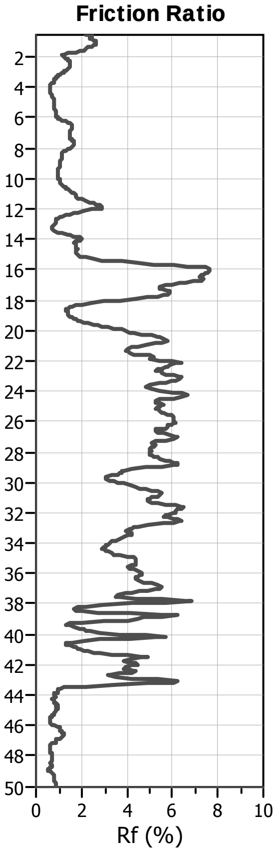
Project title : Cherryland Community Center **Location : Cherryland, CA**

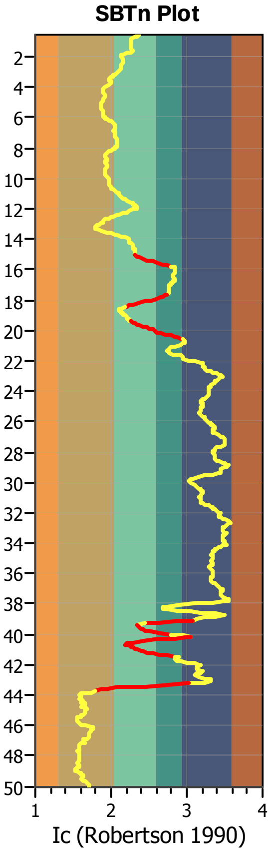
CPT file : CHERRY-2

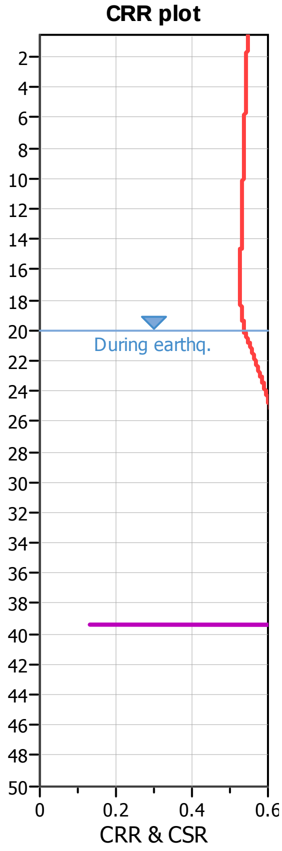
Input parameters and analysis data

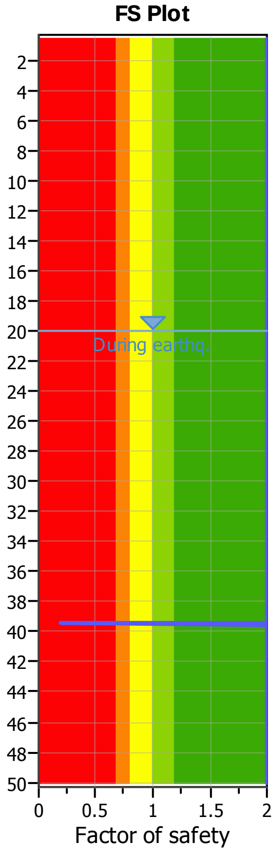
Analysis method:	NCEER (1998)	G.W.T. (in-situ):	27.20 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	20.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	7.33	Ic cut-off value:	2.60	Trans. detect. applied:	Yes		Method
Peak ground acceleration:	0.89	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

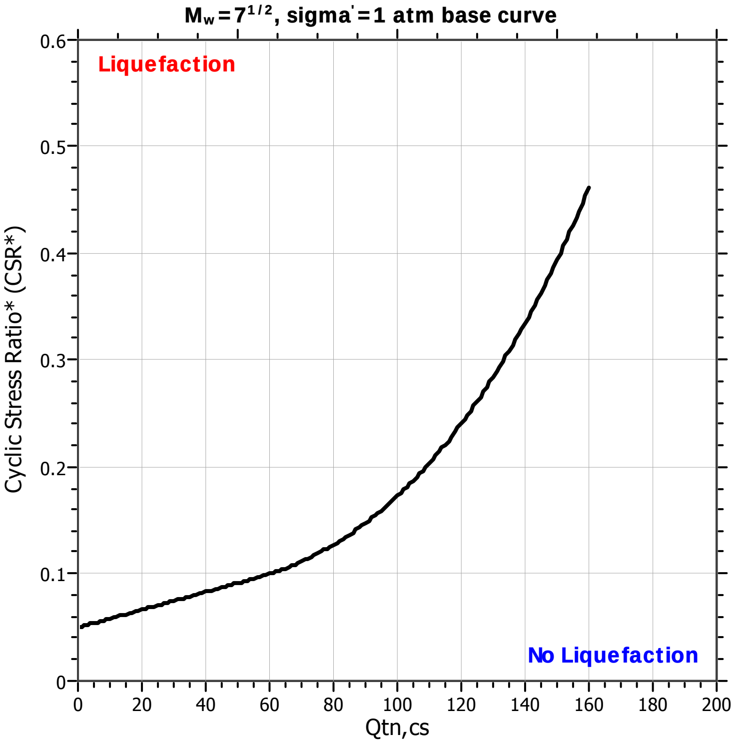


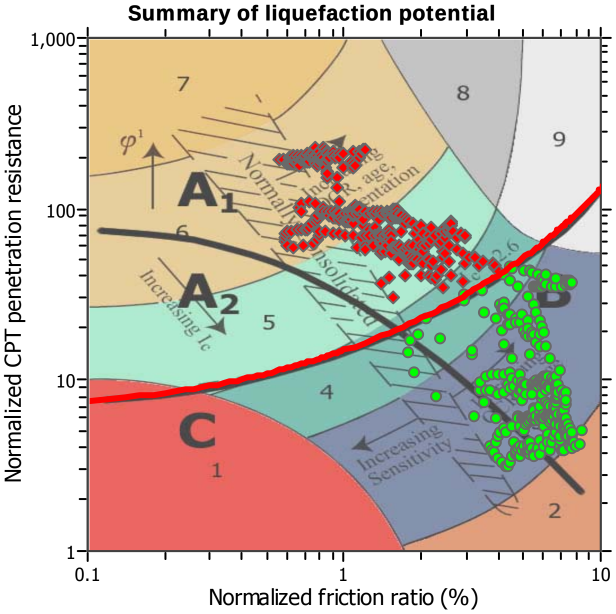






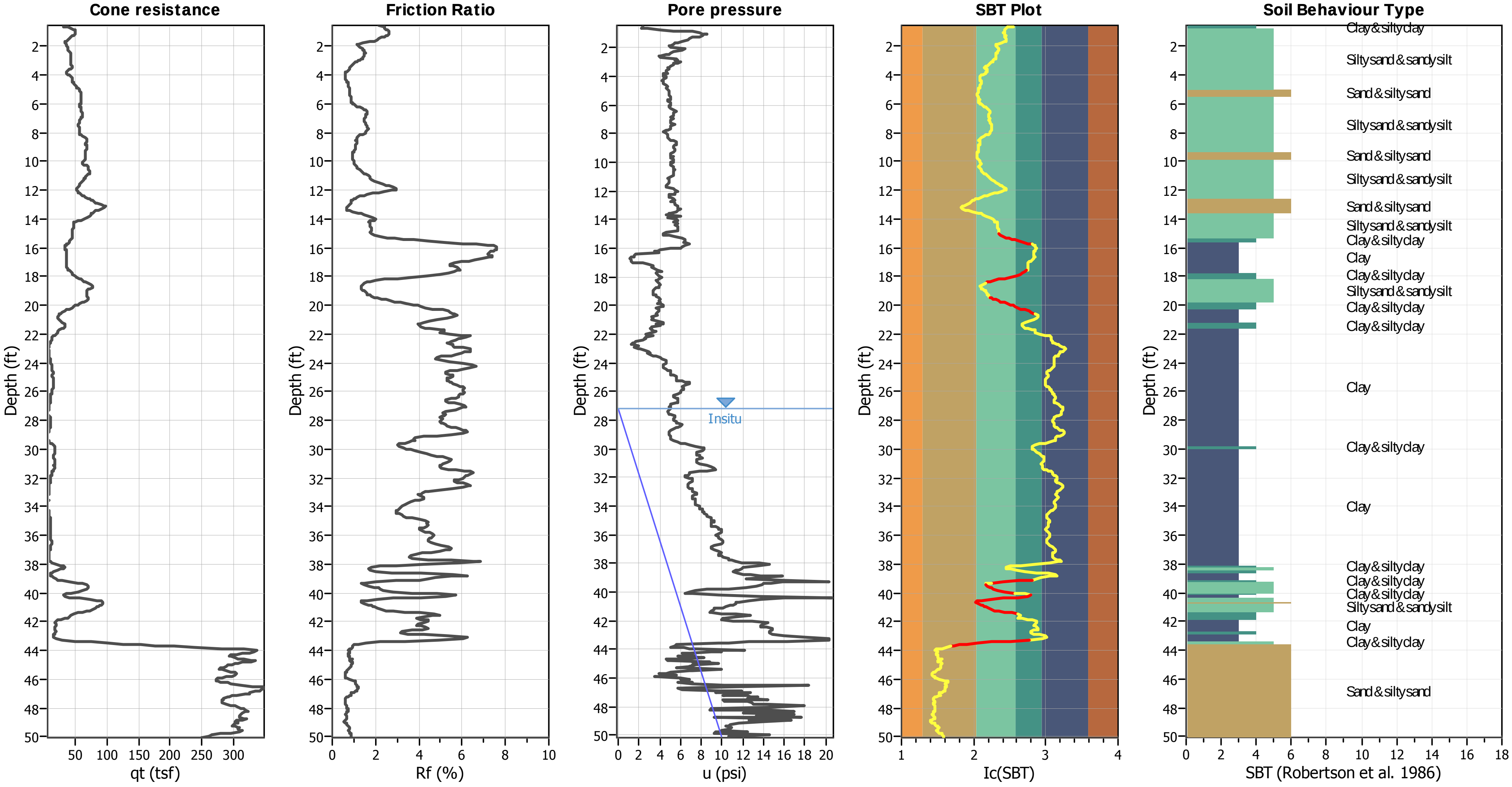






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots



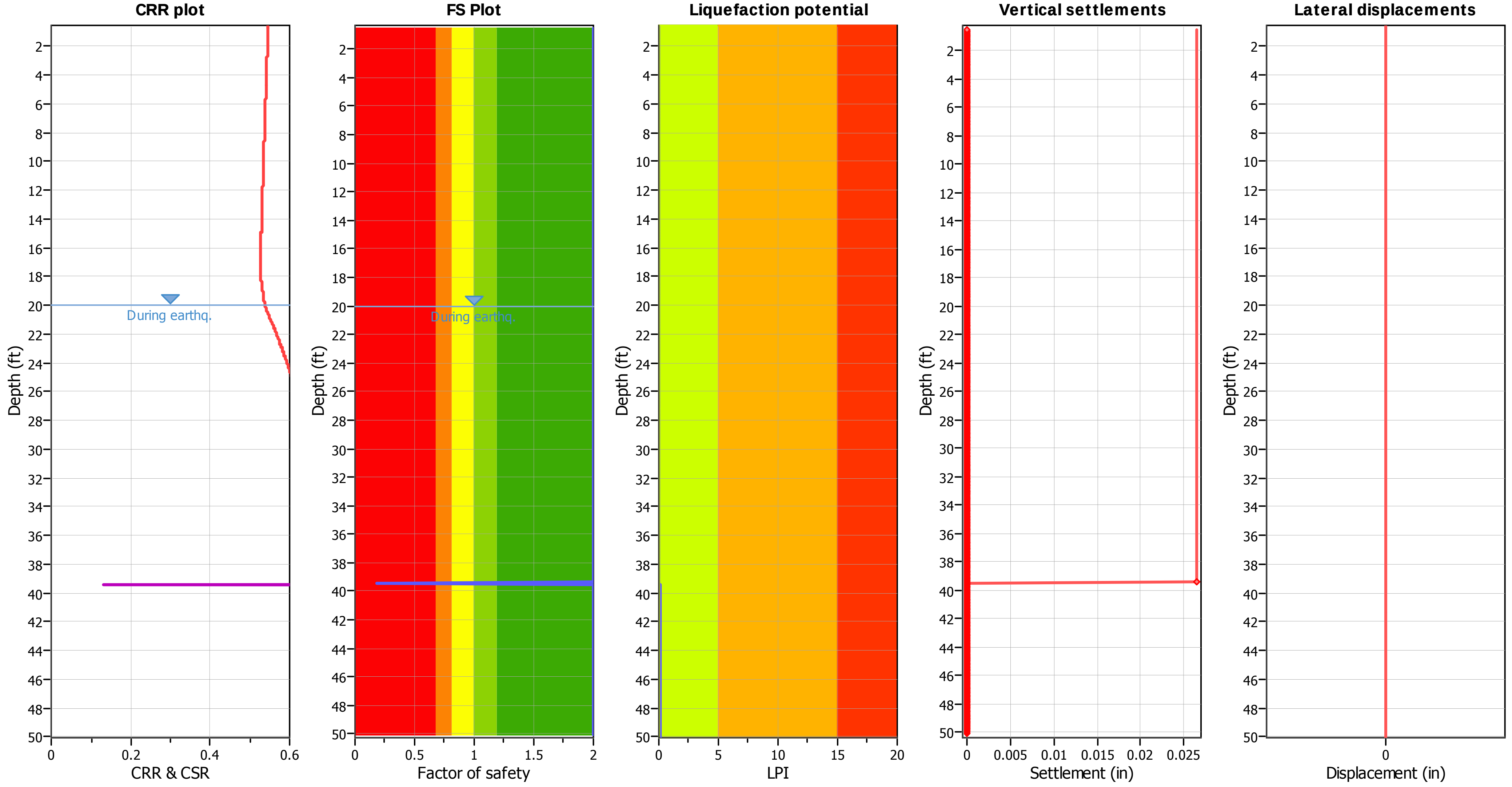
Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.33	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.89	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	27.20 ft	Fill height:	N/A	Limit depth:	N/A

SBT legend

🟥 1. Sensitive fine grained	🟩 4. Clayey silt to silty	🟧 7. Gravely sand to sand
🟫 2. Organic material	🟩 5. Silty sand to sandy silt	⬛ 8. Very stiff sand to
🟦 3. Clay to silty clay	🟨 6. Clean sand to silty sand	⬜ 9. Very stiff fine grained

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.33	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.89	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	27.20 ft	Fill height:	N/A	Limit depth:	N/A

F.S. color scheme

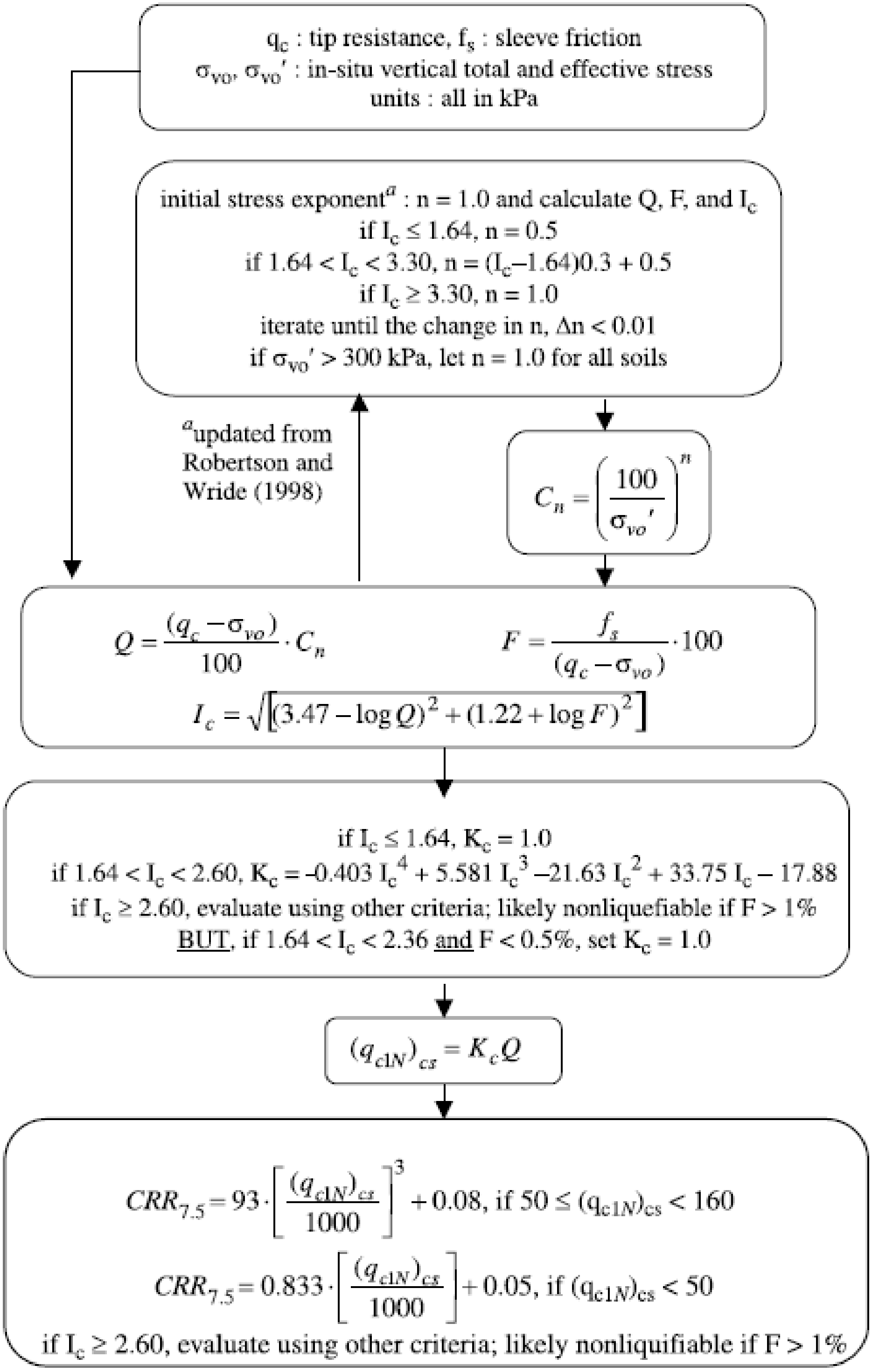
- 🟥 Almost certain it will liquefy
- 🟧 Very likely to liquefy
- 🟨 Liquefaction and no liquefaction are equally likely
- 🟩 Unlike to liquefy
- 🟩 Almost certain it will not liquefy

LPI color scheme

- 🟥 Very high risk
- 🟧 High risk
- 🟨 Low risk

Procedure for the evaluation of soil liquefaction resistance, NCEER (1998)

Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. The procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:

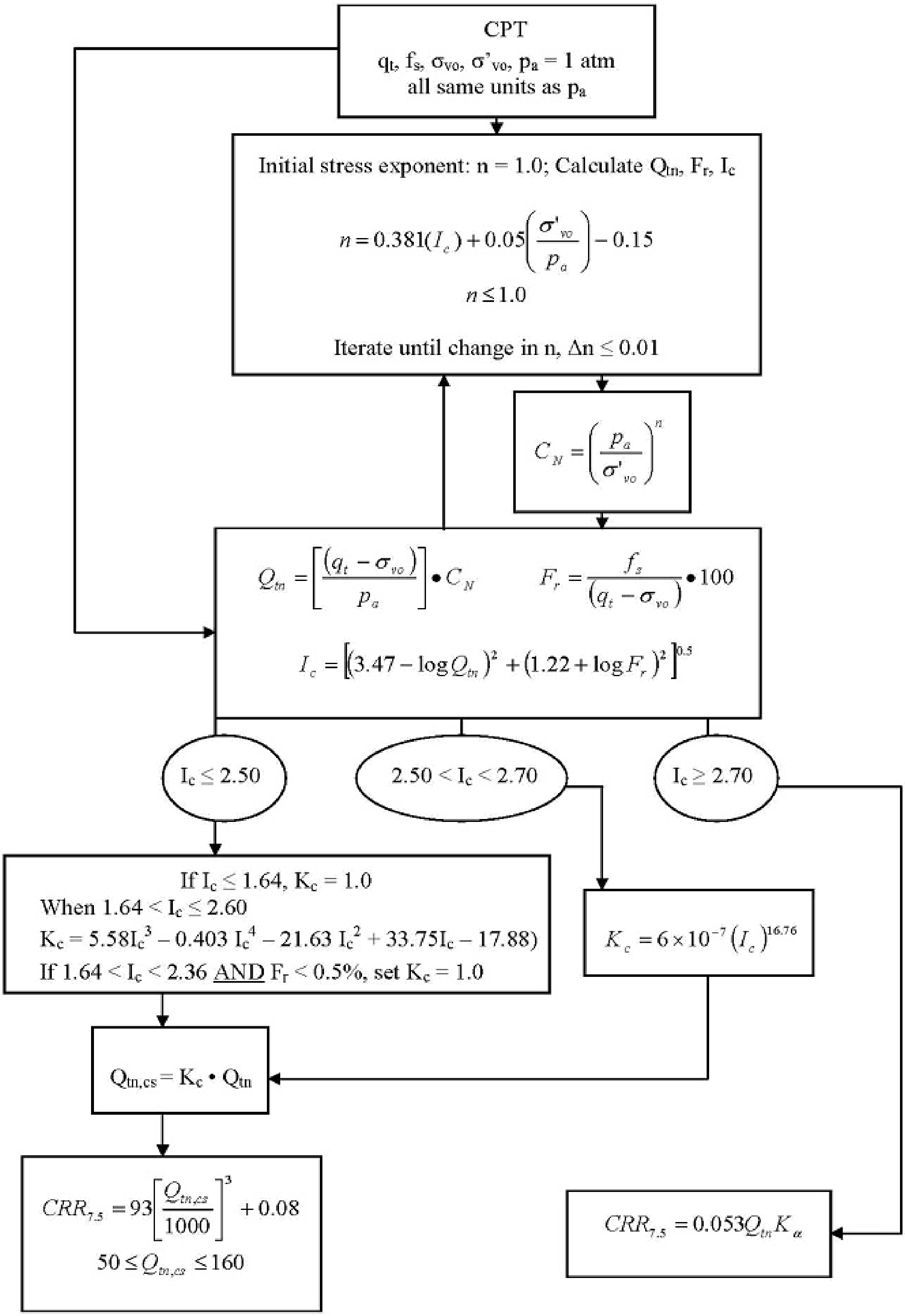


---

[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

Procedure for the evaluation of soil liquefaction resistance (all soils) - Robertson (2010)

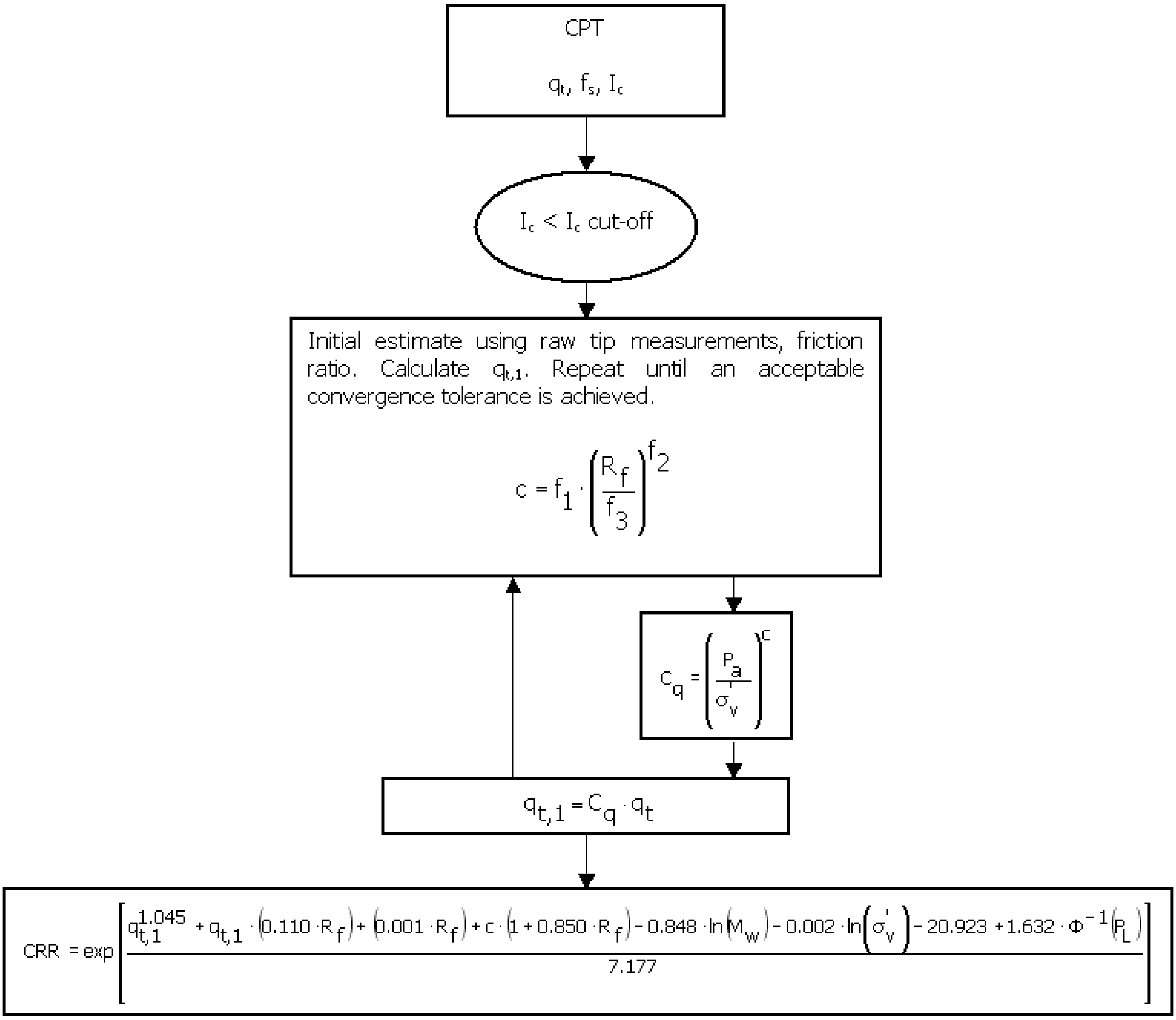
Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. This procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:



---

[1] P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009

Procedure for the evaluation of soil liquefaction resistance (sandy soils) - Moss et al. (2006)



Initial estimate using raw tip measurements, friction ratio. Calculate $q_{t,1}$. Repeat until an acceptable convergence tolerance is achieved.

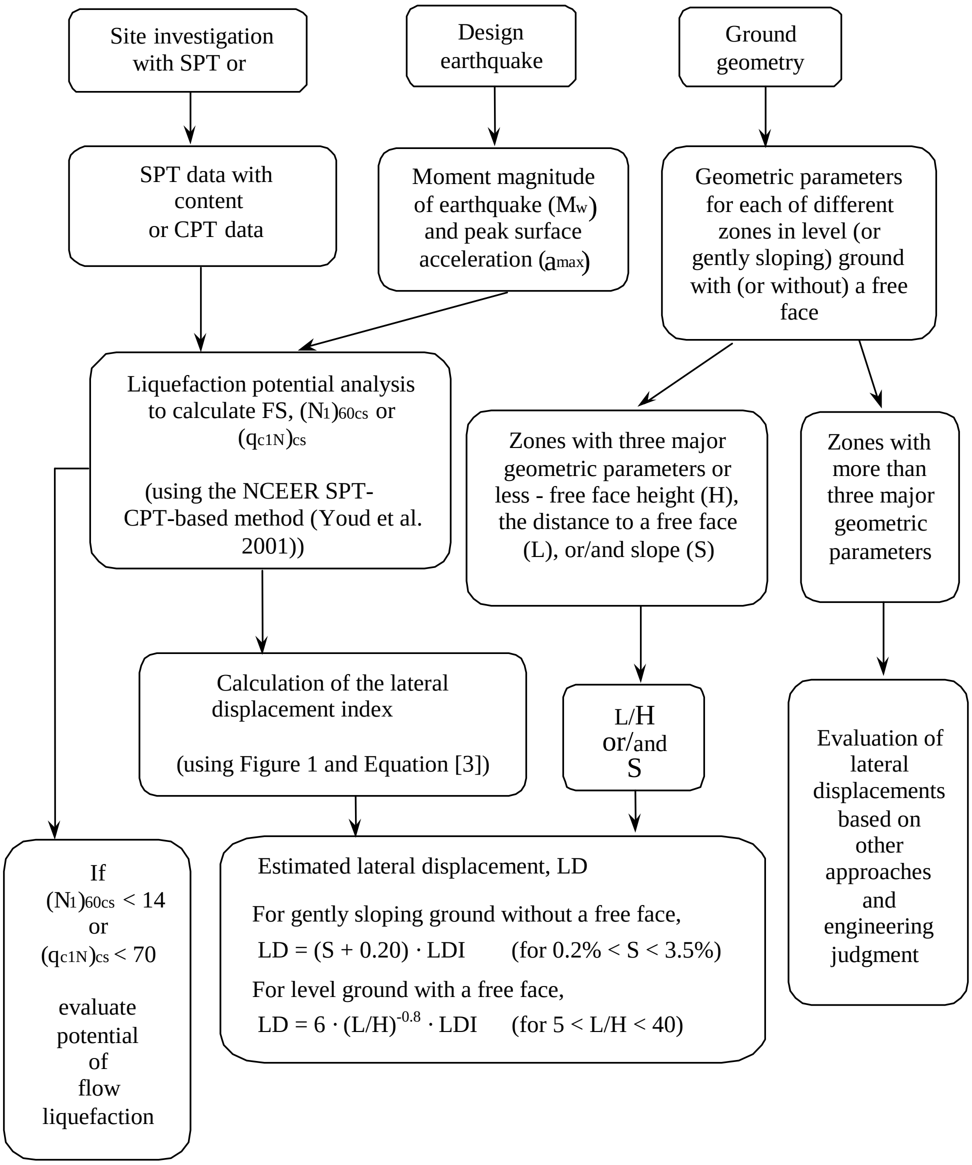
$$c = f_1 \cdot \left(\frac{R_f}{f_3}\right)^{f_2}$$

$$C_q = \left(\frac{P_a}{\sigma'_v}\right)^c$$

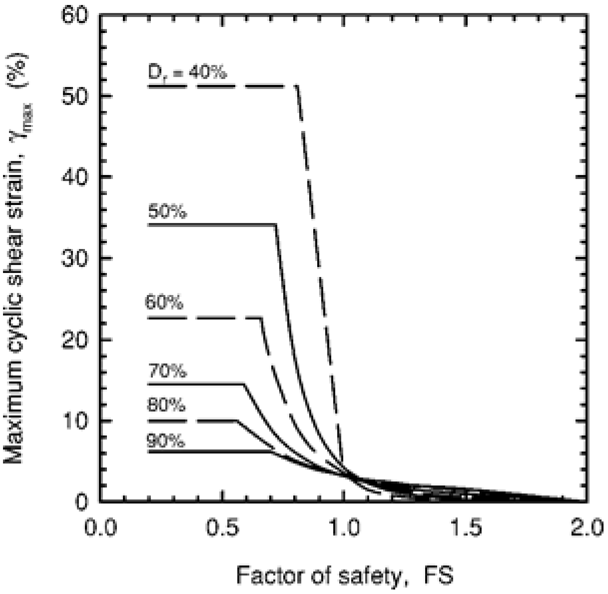
$$q_{t,1} = C_q \cdot q_t$$

$$CRR = \exp\left[\frac{q_{t,1}^{1.045} + q_{t,1} \cdot (0.110 \cdot R_f) + (0.001 \cdot R_f) + c \cdot (1 + 0.850 \cdot R_f) - 0.848 \cdot \ln(M_w) - 0.002 \cdot \ln(\sigma'_v) - 20.923 + 1.632 \cdot \Phi^{-1}(P_L)}{7.177}\right]$$

Procedure for the evaluation of liquefaction-induced lateral spreading displacements



[1] Flow chart illustrating major steps in estimating liquefaction-induced lateral spreading displacements using the proposed approach



[1] **Figure 1**

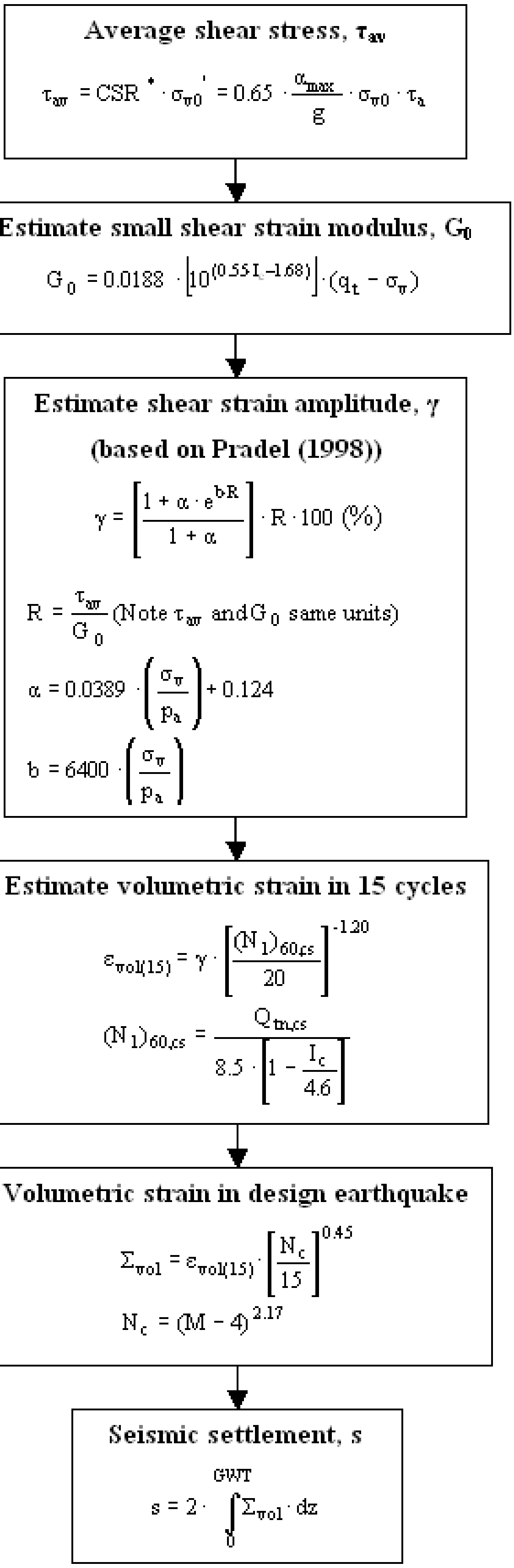
$$\mathrm{LDI} = \int_{0}^{Z_{\max}} \gamma_{\max} dz$$

[1] **Equation [3]**

---

[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

Procedure for the estimation of seismic induced settlements in dry sands



Average shear stress, τ_{av}

$$\tau_{av} = CSR^{*} \cdot \sigma_{v0}' = 0.65 \cdot \frac{a_{max}}{g} \cdot \sigma_{v0} \cdot r_d$$

Estimate small shear strain modulus, G_0

$$G_0 = 0.0188 \cdot \left[10^{(0.55 I_c - 1.68)}\right] \cdot (q_t - \sigma_v)$$

Estimate shear strain amplitude, γ (based on Pradel (1998))

$$\gamma = \left[\frac{1 + a \cdot e^{bR}}{1 + a}\right] \cdot R \cdot 100\ (\%)$$

$$R = \frac{\tau_{av}}{G_0} \text{ (Note } \tau_{av} \text{ and } G_0 \text{ same units)}$$

$$a = 0.0389 \cdot \left(\frac{\sigma_v}{p_a}\right) + 0.124$$

$$b = 6400 \cdot \left(\frac{\sigma_v}{p_a}\right)$$

Estimate volumetric strain in 15 cycles

$$\varepsilon_{vol(15)} = \gamma \cdot \left[\frac{(N_1)_{60,cs}}{20}\right]^{-1.20}$$

$$(N_1)_{60,cs} = \frac{Q_{tn,cs}}{8.5 \cdot \left[1 - \frac{I_c}{4.6}\right]}$$

Volumetric strain in design earthquake

$$\Sigma_{vol} = \varepsilon_{vol(15)} \cdot \left[\frac{N_c}{15}\right]^{0.45}$$

$$N_c = (M - 4)^{2.17}$$

Seismic settlement, s

$$s = 2 \cdot \int_0^{GWT} \Sigma_{vol} \cdot dz$$

Robertson, P.K. and Lisheng, S., 2010, “Estimation of seismic compression in dry soils using the CPT” FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, Symposium in honor of professor I. M. Idriss, San Diego, CA

Liquefaction Potential Index (LPI) calculation procedure

Calculation of the Liquefaction Potential Index (LPI) is used to interpret the liquefaction assessment calculations in terms of severity over depth. The calculation procedure is based on the methology developed by Iwasaki (1982) and is adopted by AFPS.

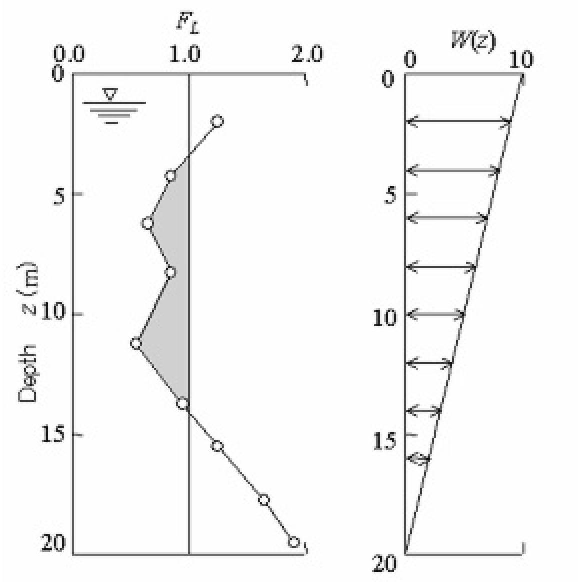
To estimate the severity of liquefaction extent at a given site, LPI is calculated based on the following equation:

$$\mathbf{LPI} = \int_{0}^{20} (10 - 0{,}5_{z}) \times F_{L} \times d_{z}$$

where:
F_L = 1 - F.S. when F.S. less than 1
F_L = 0 when F.S. greater than 1
z depth of measurment in meters

Values of LPI range between zero (0) when no test point is characterized as liquefiable and 100 when all points are characterized as susceptible to liquefaction. Iwasaki proposed four (4) discrete categories based on the numeric value of LPI:

- LPI = 0 : Liquefaction risk is very low
- 0 < LPI <= 5 : Liquefaction risk is low
- 5 < LPI <= 15 : Liquefaction risk is high
- LPI > 15 : Liquefaction risk is very high



Graphical presentation of the LPI calculation procedure

References

- Lunne, T., Robertson, P.K., and Powell, J.J.M 1997. Cone penetration testing in geotechnical practice, E & FN Spon Routledge, 352 p, ISBN 0-7514-0393-8.

- Boulanger, R.W. and Idriss, I. M., 2007. Evaluation of Cyclic Softening in Silts and Clays. ASCE Journal of Geotechnical and Geoenvironmental Engineering June, Vol. 133, No. 6 pp 641-652

- Robertson, P.K. and Cabal, K.L., 2007, Guide to Cone Penetration Testing for Geotechnical Engineering. Available at no cost at http://www.geologismiki.gr/

- Robertson, P.K. 1990. Soil classification using the cone penetration test. Canadian Geotechnical Journal, 27 (1), 151-8.

- Robertson, P.K. and Wride, C.E., 1998. Cyclic Liquefaction and its Evaluation based on the CPT Canadian Geotechnical Journal, 1998, Vol. 35, August.

- Youd, T.L., Idriss, I.M., Andrus, R.D., Arango, I., Castro, G., Christian, J.T., Dobry, R., Finn, W.D.L., Harder, L.F., Hynes, M.E., Ishihara, K., Koester, J., Liao, S., Marcuson III, W.F., Martin, G.R., Mitchell, J.K., Moriwaki, Y., Power, M.S., Robertson, P.K., Seed, R., and Stokoe, K.H., Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER and 1998 NCEER/NSF Workshop on Evaluation of Liquefaction Resistance of Soils, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 127, October, pp 817-833

- Zhang, G., Robertson. P.K., Brachman, R., 2002, Estimating Liquefaction Induced Ground Settlements from the CPT, Canadian Geotechnical Journal, 39: pp 1168-1180

- Zhang, G., Robertson. P.K., Brachman, R., 2004, Estimating Liquefaction Induced Lateral Displacements using the SPT and CPT, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 130, No. 8, 861-871

- Pradel, D., 1998, Procedure to Evaluate Earthquake-Induced Settlements in Dry Sandy Soils, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 124, No. 4, 364-368

- Iwasaki, T., 1986, Soil liquefaction studies in Japan: state-of-the-art, Soil Dynamics and Earthquake Engineering, Vol. 5, No. 1, 2-70

- P.K. Robertson, 2009, Interpretation of Cone Penetration Tests - a unified approach., Canadian Geotechnical Journal, Vol. 46, No. 11, pp 1337-1355

- P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering - from case history to practice, IS-Tokyo, June 2009

- Robertson, P.K. and Lisheng, S., 2010, "Estimation of seismic compression in dry soils using the CPT" FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, *Symposium in honor of professor I. M. Idriss,* SAN diego, CA

- R. E. S. Moss, R. B. Seed, R. E. Kayen, J. P. Stewart, A. Der Kiureghian, K. O. Cetin, CPT-Based Probabilistic and Deterministic Assessment of In Situ Seismic Soil Liquefaction Potential, Journal of Geotechnical and Geoenvironmental Engineering, Vol. 132,

Appendix D

Hazardous Materials

Phase II Environmental Site Assessment

Hazardous Material Survey Report

VISTA ENVIRONMENTAL CONSULTING
SAN LEANDRO SAN JOSE MONTEREY ANAHEIM SAN DIEGO

December 9, 2013

Mr. Rod Freitag
Environmental Program Manager
County of Alameda General Services Agency
Technical Services Department
1401 Lakeside Drive, Room 1115
Oakland, CA 94612

RE: Phase II Environmental Site Assessment
17482 Boston Road and 278 Hampton Road
Hayward, California

Dear Mr. Freitag:

Vista Environmental Consulting, Inc. (Vista) has prepared this report to document the geophysical survey and soil sampling conducted at 17482 Boston Road and 278 Hampton Road located in Hayward, California (the Site, Figures 1 & 2). The following sections present the objective of the work, a description of field activities and a summary of the analytical results.

Objective

The objective of this project was to perform a Phase II subsurface investigation at the Site. The work described herein was performed on behalf of the County of Alameda General Services Agency (GSA) and in response to recommended additional investigation activities, as stated in the Vista Phase I Environmental Site Assessment (Phase I ESA) completed in September, 2013.

Field Preparation

Vista performed field reconnaissance and marked boring locations in white paint for Underground Service Alert (USA), a regional sub-surface utility notification service. Figure 2 depicts the boring locations. A boring permit from Alameda County Public Works Agency was not needed for the shallow soil sampling.

Field Work

Based on the Site use history and Vista's observations, the Phase I ESA recommended the collection of soil samples. In addition to soil sampling, GSA requested the performance of a geophysical survey. Presented below are descriptions of each of these two field activities.

Geophysical Survey

A geophysical survey was performed at the Site on October 21, 2013, by JR Associates, an engineering geophysics firm located in San Jose, California. The purpose of the survey was to identify subsurface anomalies that could be indicative of buried metal objects such as tanks, pipes, etc. A complete copy of the geophysical survey report is included as Attachment 1. A discussion of the results is presented below.

Soil Sample Collection

A total of (24) discrete soil samples from (12) soil borings (Figure 2) and (14) 3-point composite soil samples (Figure 3) were collected at the Site on October 10 and 16, 2013. A summary of sample collection performed at the Site is as follows:

1. (8) discrete soil borings located at the Hampton Road property (B-1 through B-8). These borings were advanced using a hand auger to a total depth of 24 inches below ground surface (bgs) with the first sample collected from the ground surface to 12 inches bgs and the second sample collected from 12 inches to 24 inches bgs.
2. (10) 3-point composite surface soil samples (278-131010-HA02-01 through 278-131010-HA02-10) located at the Hampton Road property. The 3-point composite samples were collected by placing (3) approximately equal sized soil aliquots from within each composite sampling location.
3. (4) discrete soil borings located at the Boston Road property (B-9 through B-12). These borings were advanced using a hand auger to a total depth of 24 inches bgs with the first sample collected from the ground surface to 12 inches bgs and the second sample collected from 12 inches to 24 inches bgs.
4. (4) 3-point composite surface soil samples (17482-101613-HA01-01 through 17482-101613-HA01-04) located at the Boston Road property. The 3-point composite samples were collected by placing (3) approximately equal sized soil aliquots from within each composite sampling location.

Vista advanced the soil borings using a hand auger and collected the soil samples as the soil cuttings were retrieved at the surface. The generated soil cuttings were continuously observed such that soil type could be assessed. Recovered soil cuttings were described in general accordance with ASTM standard D-2488-09a and soil type and observations were recorded in the field notes. Soil samples were collected by carefully placing the generated soil cuttings into a clean stainless steel bowl, homogenizing the sample interval and transferring the sample into clean laboratory provided glass jars. Once in the jar, the sample was placed in ice filled chests for transport to TestAmerica, Inc. located in Pleasanton, California, a state of California certified analytical laboratory, under chain-of-custody protocol. Sampling staff used new nitrile gloves before commencing soil boring activities at each sampling location and a second set of new nitrile gloves was used prior to actual soil sample collection.

Prior to commencing soil boring activities at the first boring location and between each soil boring location the sampling tools were cleaned by washing tools that came in contact with the soil (hand auger, stainless steel bowl) in an alconox-water solution, washing with a scrub brush, then rinsing in a bucket of clean water.

Vista collected the 3-point composite surface soil samples by first defining each composite sampling zone then collecting the three approximately equal sized aliquots from within each of these zones. Surface soil samples were collected by gently scooping soil by hand and into the sample container. Sampling staff used new nitrile gloves before commencing soil sampling activities at each composite soil sampling zone. Once in the sample container, the sample was placed in ice filled chests for transport to Forensic Analytical Laboratory located in Hayward, California, a state of California certified analytical laboratory, under chain-of-custody protocol.

Observed soil type consisted primarily of brown silt (ML) with varying degrees of sand, gravel and building debris, depending on the particular sampling location. At the Hampton Road property the following observations were made: Building debris (e.g., stucco, wood, glass, metal) was noted in borings B-2, B-3 and B-4. Borings B-1 and B-7 were observed to contain primarily silt with varying degrees of sand and gravel. Borings B-5, B-6 and B-8 were observed to be comprised of silt. At the Boston Road property borings B-9 through B-12 were observed to be comprised of silt with no sand, gravel nor building debris noted. Copies of the field notes are included as Attachment 1.

Analytical Program

For the 8 discrete soil borings located at 278 Hampton Road, the soil samples collected from 0-1.0 feet bgs were initially analyzed by the following analytical procedures:

1. Organochlorine pesticides by USEPA Method 8081A;
2. Herbicides by USEPA Method 8151A;
3. RCRA 8 metals by USEPA Method 6010 (ICP); and
4. Asbestos by polarized light microscopy (PLM).

For the (10) 3-point composite surface soil samples located at 278 Hampton Road, the soil samples were analyzed by the following analytical procedures:

1. Asbestos by PLM; and
2. Lead by USEPA 3050B/7420.

For the 4 discrete soil borings located at 17482 Boston Road, the soil samples collected from 0-1.0 feet bgs were initially analyzed by the following analytical procedures:

1. Organochlorine pesticides by USEPA Method 8081A;
2. Herbicides by USEPA Method 8151A; and
3. RCRA 8 metals by USEPA Method 6010 (ICP)

For the (4) 3-point composite surface soil samples located at 17482 Boston Road, the soil samples were analyzed by the following analytical procedures:

1. Asbestos by Polarized Light Microscopy (PLM) utilizing dispersion staining techniques in accordance with the EPA's "Method for the Determination of Asbestos in Bulk Building Materials" U.S. EPA/600/R-93/116, Visual Area Estimate, dated July 1993 and adopted by the NVLAP as Test Method Code 18/A01; and
2. Lead by USEPA 3050B/7420.

Discrete soil samples collected from 12 to 24 inches bgs were placed on hold pending the results of the discrete soil samples collected from 0 to 12 inches bgs.

Based on the initial analytical results, some of the deeper discrete soil samples were analyzed:

1. Sample B-2-2.0: lead, cadmium and arsenic by USEPA Method 6010 (ICP) and organochlorine pesticides by USEPA Method 8081A;
2. Sample B-3-2.0: lead and arsenic by USEPA Method 6010 (ICP) and organochlorine pesticides by USEPA Method 8081A;
3. Sample B-5-2.0: lead and arsenic by USEPA Method 6010 (ICP) and organochlorine pesticides by USEPA Method 8081A;
4. Sample B-6-2.0: organochlorine pesticides by USEPA Method 8081A;
5. Sample B-7-2.0: lead and arsenic by USEPA Method 6010 (ICP) and organochlorine pesticides by USEPA Method 8081A;
6. Sample B-8-2.0: lead and arsenic by USEPA Method 6010 (ICP) and organochlorine pesticides by USEPA Method 8081A;
7. Sample B-10-2.0: lead and arsenic by USEPA Method 6010 (ICP) and organochlorine pesticides by USEPA Method 8081A;
8. Sample B-11-2.0: lead and arsenic by USEPA Method 6010 (ICP) and organochlorine pesticides by USEPA Method 8081A; and
9. Sample B-12-2.0: lead, chromium, barium and arsenic by USEPA Method 6010 (ICP) and organochlorine pesticides by USEPA Method 8081A.

Additionally, and upon review of the initial analytical results, the following additional analyses were requested of shallow discrete soil samples:

1. Sample B-5-1.0: hexavalent chromium by USEPA Method 7191A;
2. Sample B-8-1.0: hexavalent chromium by USEPA Method 7191A; and
3. Sample B-12-1.0: hexavalent chromium by USEPA Method 7191A.

Upon conclusion of soil boring and sample collection activities at each discrete soil boring location the boring was backfilled with generated soil core to the ground surface and nominally compacted.

Geophysical Survey Results

According to the JR Associates report, the results of the geophysical survey indicated several subsurface anomalies at the Site. Most of the anomalies could be explained by existing cyclone fencing, existing concrete slabs and existing structures. Other anomalies could be attributed to buried metal piping, which appears to be associated with water pipes from an irrigation system at the Hampton Road property. One anomaly centered in the Hampton Road property appeared to consist of four smaller anomalies all located adjacent to each other. The location of these 4 small anomalies is depicted on Figure 2 of the JR Associates report (Attachment 1).

Analytical Results

Table 1 presents the results of the asbestos, pesticide and herbicide analyses on discrete soil samples. Table 2 presents the results of the metals analyses on discrete soil samples. Table 3 presents the results of the asbestos and lead analyses on composite soil samples. Only those detected compounds were listed on the tables. Complete copies of the analytical laboratory reports and chain of custody records for the discrete soil samples are included as Attachment 3. Complete copies of the analytical laboratory reports and chain of custody records for the composite soil samples are included as Attachment 4.

Discrete Soil Sample Results

Asbestos was not detected in any soil samples analyzed from 0-1.0 feet (borings B-1 through B-8 at Hampton Road) above laboratory detection limits.

Pesticides were detected in all samples analyzed except samples B-6-2.0, B-9-1.0 and B-12-2.0. 4,4' DDT was detected in 17 of 21 samples analyzed at concentrations ranging from 2.4 to 310 micrograms per kilogram (ug/kg). 4,4' DDE was detected in 15 of 21 samples analyzed at concentrations ranging from 2.4 to 490 ug/kg. 4,4' DDD was detected in 12 of 21 samples analyzed at concentrations ranging from 2.3 to 290 ug/kg. Chlordane was detected in 5 of 21 samples analyzed at concentrations ranging from 60 to 3200 ug/kg. Alpha-chlordane was detected in 7 of 21 samples analyzed at concentrations ranging from 2.4 to 1100 ug/kg. Gamma-chlordane was detected in 6 of 21 samples analyzed at concentrations ranging from 3.7 to 800 ug/kg. Gamma-BHC (Lindane) was detected in 1 of 21 samples analyzed at a concentration of 17 ug/kg. Endosulfan sulfate was detected in 4 of 21 samples analyzed at concentrations ranging from 3 to 34 ug/kg. Dieldrin was detected in 13 of 21 samples analyzed at concentrations ranging from 3.2 to 1200 ug/kg.

The herbicide dicamba was detected in sample B-8-1.0 at a concentration of 3700 ug/kg. All other samples did not contain herbicides above laboratory detection limits.

Lead, cadmium, nickel, total chromium, arsenic, barium and mercury were detected in some or all samples analyzed. All samples were non-detect for silver and selenium. Lead was detected in 20 of 20 samples analyzed at concentrations ranging from 10 to 1400 milligrams per kilogram (mg/kg). Cadmium was detected in 9 of 13 samples analyzed at concentrations ranging from 0.46 to 3.4 mg/kg. Nickel was detected in 8 of 8 samples analyzed at concentrations ranging from 21 to 42 mg/kg. Total chromium was detected in 13 of 13 samples analyzed at concentrations ranging from 21 to 200 mg/kg. Hexavalent chromium was detected in 0 of 3 samples analyzed. Arsenic was detected in 20 of 20 samples analyzed at concentrations ranging from 4.4 to 47 mg/kg. Barium was detected in 13 of 13 samples analyzed at concentrations ranging from 110 to 930 mg/kg. Mercury was detected in 13 of 13 samples analyzed at concentrations ranging from 0.063 to 0.40 mg/kg.

Composite Soil Sample Results
Asbestos was not detected in any of the composite soil samples collected from the Site.

Lead was detected in all 14 composite soil sampling locations at both the Hampton and Boston Road properties. At the Hampton Road property, lead ranged in concentration from 210 mg/kg to 1800 mg/kg. At the Boston Road property, lead ranged in concentration from 70 mg/kg to 1800 mg/kg.

Discussion

For review and discussion purposes, soil sample analytical results were compared to regulatory agency criteria. The following criteria were used:

1. California Regional Water Quality Control Board – San Francisco Bay Region Environmental Screening Levels, Summary Tables B-1 and B-2. May 2013. (ESLs)

2. Office of Environmental Health Hazard Assessment, California Human Health Screening Levels, Table 1 – Soil Screening Numbers for Non-Volatile Chemicals Based on Total Exposure to Contaminated Soil: Inhalation, Ingestion and Dermal Absorption, September 23, 2010. (CHHSLs)

In order to better understand the detections of metals, the following two sources were referenced to determine if the detected concentrations of metals fell within the expected range of detections associated with naturally occurring metals in the environment:

1. Hansford T. Shaklette and Josephine G. Boerngen, *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States*, U.S. Geological Survey Professional Paper 1270, 1984. (Shaklette)

2. Diamond, et al, *Analysis of Background Distributions of Metals in the Soil at Lawrence Berkeley National Laboratory*, Lawrence Berkeley National Laboratory, Environmental Restoration Program, June 2002 (revised April 2009). (LBNL)

Asbestos
As stated in the Analytical Results section, asbestos was not detected in any of the soil samples analyzed (discrete soil borings B-1-1.0 through B-8-1.0 and composite soil samples 278-131010-HA02-01 through 278-131010-HA02-10 at Hampton Road; discrete soil borings B-9-1.0 through B-12-1.0 and composite soil samples 17482-101613-HA01-01 through 17482-101613-HA01-04 at Boston Road).

Pesticides
The detected concentrations of pesticides 4,4'-DDT, 4,4'-DDE and 4,4'-DDD were below the regulatory criteria referenced in this report.

Chlordane (technical or "total") was detected above the residential ESL and the residential CHHSL in two samples (B-10-1.0 and B-10-2.0) and above the commercial/industrial ESL and commercial/industrial CHHSL in one sample (B-10-1.0).

There are numerous derivations of chlordane that can be found, of which alpha- and gamma-chlordane are reportedly the most persistent in the environment. Regulatory criteria used for chlordane is based on an additive compilation of these different derivations. According to the analytical laboratory, adding the concentrations of alpha and gamma-chlordane to arrive at a total chlordane level is an acceptable methodology and will thus provide a meaningful comparison to regulatory criteria as the ESLs and CHHSLs do not present alpha nor gamma-chlordane levels, just (technical or "total") chlordane.

Gamma-BHC (Lindane) was detected above the residential and commercial/industrial ESL in one sample (B-8-1.0). It should be noted that for sample B-7-2.0, the analytical laboratory used a dilution factor of 10 due to the elevated concentrations of Dieldrin, DDT and DDD. This resulted in a detection limit of 19 ug/kg for gamma-BHC, which is above the residential and commercial/industrial ESL of 9.8 ug/kg. It should also be noted that gamma-BHC was not detected in the shallower soil sample from boring B-7 (B-7-1.0) based on a detection limit of 2.0 ug/kg.

Endosulfan sulfate was detected above the residential and commercial/industrial ESL in three samples (B-7-1.0, B-7-2.0 and B-8-1.0). It should be noted that for sample B-12-1.0, the analytical laboratory used a dilution factor of 5 due to the elevated concentrations of Dieldrin and DDT. This resulted in a detection limit of 9.8 ug/kg for endosulfan sulfate, which is above the residential and commercial/industrial ESL of 4.6 ug/kg.

Dieldrin was detected above the residential and commercial/industrial ESL in twelve samples, above the residential CHHSL in six samples and above the commercial/industrial CHHSL in five samples.

It should be noted that the residential and commercial/industrial ESLs for dieldrin that are presented on Table 1 are based on a "groundwater protection" basis and not on a "human health protection" basis. We chose to use the groundwater protection basis as it is the lowest number and therefore the most conservative. For reference, the residential ESL for protection of human health is 34 ug/kg and the commercial/industrial ESL for protection of human health is 67 ug/kg.

In the case of toxaphene, the laboratory supplied method detection limit ranges from a low of 39 ug/kg (with a dilution factor of 1) to a high of 200 ug/kg (dilution factor of 5). The ESL User's Guide (first published in November 2007, updated in May 2008 and currently undergoing a second update in 2013) directs the user to substitute the laboratory method detection limit in place of the posted ESL (ESL User's Guide, Section 2.8, Substitution of Laboratory Reporting Limits and Ambient Background Concentrations for ESLs). The User's Guide states that, "…it is generally acceptable to consider the method reporting limit in place of the screening level." This process was confirmed with Uta Hellmann-Blumberg, Staff Toxicologist of the RWQCB, Region 2 (San Francisco Bay Region) via telephone conversation on December 2, 2013.

As noted on the analytical laboratory report from TestAmerica, a few of the subsequently requested pesticide analyses were conducted outside of the 14 day holding time. While this is not ideal from a data defensibility standpoint, the fact that pesticides are well known to be persistent in the environment leads to the conclusion that the concentration of any pesticides contained in the samples will most likely not degrade or decrease over the span of several days beyond the 14 day holding time. An additional point is to note that the samples were stored in a refrigerator at the laboratory thereby further reducing the possibility of sample concentration degradation.

Metals

Of the 10 metals analyzed, 3 were not detected above laboratory detection levels (hexavalent chromium, silver and selenium). Of the 7 that were detected, 3 were above (lead, arsenic and barium) and 4 were below (cadmium, nickel, total chromium, and mercury) the regulatory criteria referenced in this report.

For lead sample results (including all discrete and composite samples), the levels ranged from 10 mg/kg to a maximum of 1800 mg/kg. The regulatory criteria range from a low of 80 mg/kg (residential ESL and CHHSL) to a high of 320 mg/kg (commercial/industrial ESL and CHHSL). Of the 34 samples analyzed, 25 were above either ESLs and/or CHHSLs. Of these exceedances, 9 were above both the residential ESLs and the CHHSLs but below the commercial/industrial ESLs and CHHSLs and 16 samples were above the commercial/industrial ESLs and CHHSLs.

For arsenic, the levels ranged from 4.4 mg/kg to a maximum of 47 mg/kg. The regulatory criteria range from a low of 0.07 mg/kg (residential CHHSL) to a high of 0.96 mg/kg (commercial/industrial ESL). Having arsenic exceed the regulatory criteria is common in the bay area due to naturally elevated arsenic concentrations in the local bedrock and soil created by the degradation of bedrock. Except for the samples collected at boring B-10 (47 mg/kg at 0-1.0 feet bgs and 45 mg/kg at 1.0-2.0 feet bgs) it appears the levels detected in soil during this program appear similar to those detected in locations throughout the bay area and also appear indicative of natural conditions. At boring B-10, it still may be that the detected concentrations are from a naturally occurring source especially given that all other samples do not indicate a widespread issue of elevated concentrations of arsenic.

For reference, the expected range of concentrations of naturally occurring arsenic, according to Shaklette, is <0.10 to 97 mg/kg with an arithmetic mean concentration of 7.0 mg/kg. The LBNL study estimates that the local (East Bay hills) upper estimate of background concentration is 24 mg/kg. Therefore, when the generated analytical data is compared to the expected range and mean concentration of naturally occurring arsenic one can reasonably conclude that the detected concentrations of arsenic at the Site are most likely due to naturally occurring arsenic in local bedrock and/or soils.

For barium, the levels ranged from 110 to 930 mg/kg. The regulatory criteria range from a low of 750 mg/kg (residential ESL) to a high of 63,000 mg/kg (commercial/industrial CHHSL). A single sample (B-

12-1.0) contained barium at 930 mg/kg, which is above the residential ESL of 750 mg/kg. It is important to note that the deeper sample from boring B-12 contained barium at a concentration of 140 mg/kg; well below the residential ESL. Shaklette reports an estimated arithmetic mean concentration of barium in surficial soils in the western United States is 670 mg/kg with an observed range from 70 to 5,000 mg/kg. LBNL reports that an upper estimate of expected background concentration of barium is estimated to be 410 mg/kg. While 930 mg/kg appears to fall outside of the two estimated mean concentrations, it does not appear to be a widespread issue across the Site and furthermore, the one exceedance does fall well within the observed range of concentrations of 70 to 5,000 mg/kg (Shaklette).

Conclusions and Recommendations

Based on the results of the geophysical survey, 4 small and adjacent subsurface anomalies were identified at the Hampton Road property. Given the size and location of these anomalies relative to the location of the former residence at this address, a potholing effort should be conducted to determine the source of the anomaly.

Based on the detected concentrations of certain pesticides (chlordane, gamma BHC, endosulfan sulfate and dieldrin) and lead, it appears that additional lateral and vertical characterization may be warranted. When the lateral and vertical extent of affected soil is defined, removal of affected soil should be contemplated. Additionally, and given the detected levels of pesticides and lead, reporting to a local regulatory agency appears warranted.

Vista appreciates the opportunity to provide The County of Alameda with our environmental consulting services and please do not hesitate to contact Mr. Charles Bove at 925-948-5097 if you have any questions or require additional information.

Respectfully submitted,

Charles Bove
Principal

Brendan Mulholland, PG
Project Manager

1. Figures (3)
2. Tables (3)
3. Attachment 1– Geophysical Survey Report – JR Associates
4. Attachment 2 – Field Notes
5. Attachment 3 - Analytical Laboratory Reports – TestAmerica
6. Attachment 4 - Analytical Laboratory Reports - Forensic

DRAWN BY SLW
FILE NAME ----
PROJECT NUMBER ----

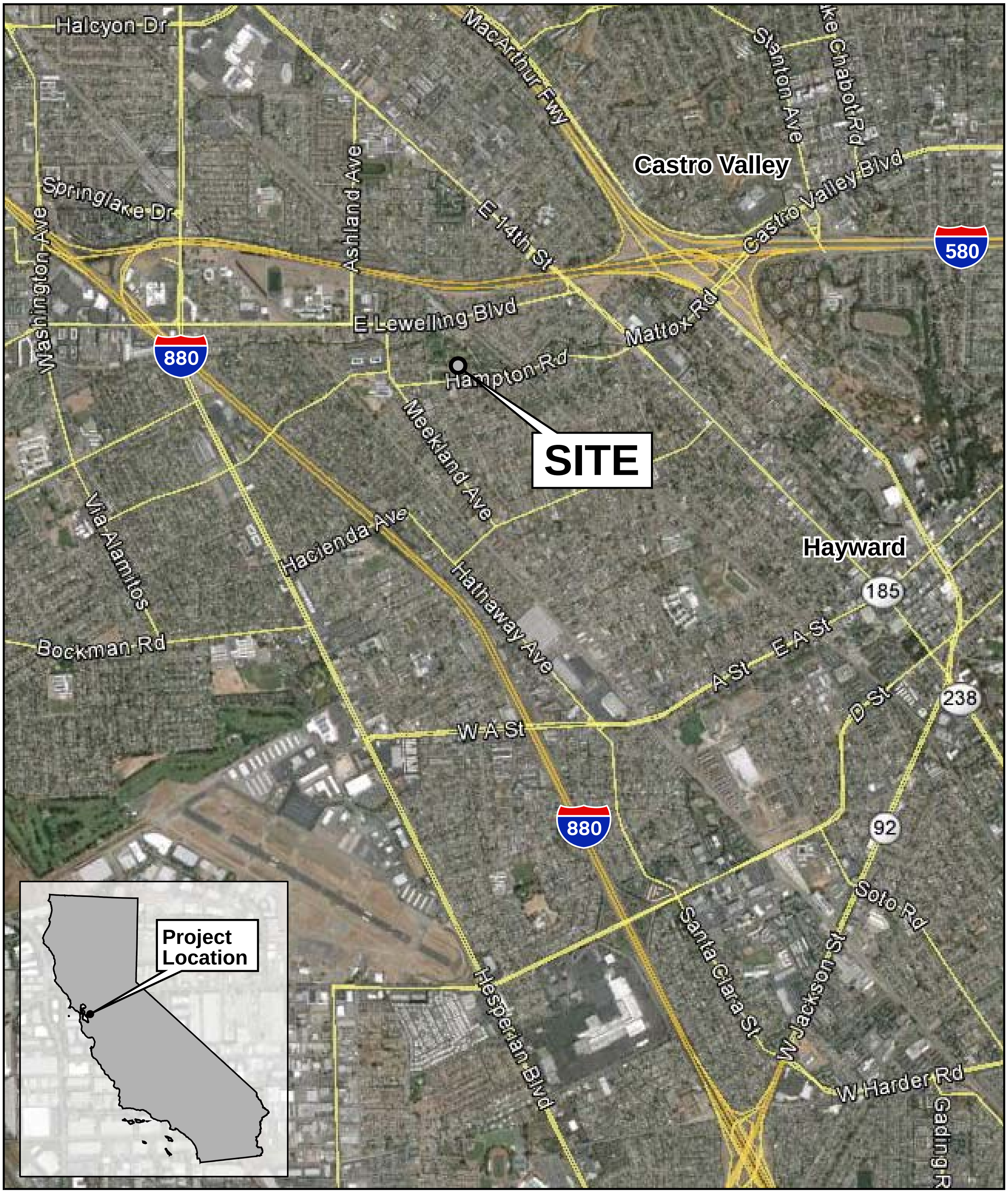
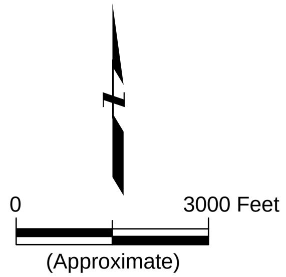


Image from Google Earth



VISTA ENVIRONMENTAL
CONSULTING, INC.
2984 Teagarden Street
San Leandro, CA 94577

SITE LOCATION MAP
17482 Boston Rd and 278 Hampton Rd
Hayward, California

Figure
1

DRAWN BY SLW

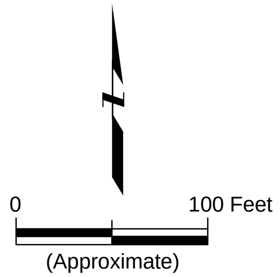
FILE NAME ----

PROJECT NUMBER ----

Image from Google Earth

Legend

⊕ Soil boring location



VISTA ENVIRONMENTAL CONSULTING, INC.

2984 Teagarden Street
San Leandro, CA 94577

SITE PLAN AND
DISCRETE BORING LOCATION MAP
17482 Boston Rd and 278 Hampton Rd
Hayward, California

Figure

2

Image from Google Earth

Legend

1 ●●● Composite soil sample locations and corresponding sample name

VISTA ENVIRONMENTAL CONSULTING, INC.
2984 Teagarden Street
San Leandro, CA 94577

COMPOSITE SOIL SAMPLE LOCATION MAP
17482 Boston Rd and 278 Hampton Rd
Hayward, California

Figure
3

DRAWN BY SLW
FILE NAME ----
PROJECT NUMBER ----

TABLE 1
DISCRETE SOIL ANALYTICAL RESULTS - ASBESTOS, PESTICIDES, and HERBICIDES[1]

17482 Boston Road and 278 Hampton Road
Hayward, California

				Pesticides (ug/Kg)									Herbicides (ug/Kg)
Sample Name	**Sample Depth (ft bgs)**	**Sample Date**	**Asbestos**	**4, 4'-DDT**	**4, 4'-DDE**	**4, 4'-DDD**	**Chlordane (technical)**	**alpha-Chlordane[2]**	**gamma-Chlordane[2]**	**gamma-BHC (Lindane)**	**Endosulfan sulfate**	**Dieldrin**	**Dicamba**
B-1-1.0	0 - 1.0	10/16/13	ND	10	14	3.8	<40	2.5	<2	<2	<2	<2	<330
B-2-1.0	0 - 1.0	10/16/13	ND	6.5	2.4	2.7	<40	<2	<2	<2	<2	**3.4**	<320
B-2-2.0	1.0 - 2.0	10/16/13	NA	3	<2	<2	<40	<2	<2	<2	<2	<2	NA
B-3-1.0	0 - 1.0	10/16/13	ND	16	3.1	14	<40	<2	<2	<2	<2	**13**	<330
B-3-2.0	1.0 - 2.0	10/16/13	NA	3.9	<1.9	<1.9	<39	<1.9	<1.9	<1.9	<1.9	2.8	NA
B-4-1.0	0 - 1.0	10/16/13	ND	2.4	2.9	<2	<40	<2	<2	<2	<2	<2	<320
B-5-1.0	0 - 1.0	10/16/13	ND	46	95	51	<40	<2	<2	<2	<2	**180**	<330
B-5-2.0	1.0 - 2.0	10/16/13	NA	5.4	6.3	2.3	<40	<2	<2	<2	<2	**8.9**	NA
B-6-1.0	0 - 1.0	10/16/13	ND	<2	<2	<2	<40	<2	<2	<2	<2	**3.2**	<330
B-6-2.0	1.0 - 2.0	10/16/13	NA	<2	<2	<2	<40	<2	<2	<2	<2	<2	NA
B-7-1.0	0 - 1.0	10/16/13	ND	77	36	75	63	2.4	3.7	<2	**33**	**1100**	<330
B-7-2.0	1.0 - 2.0	10/16/13	NA	170	100	33	<390	<19	<19	<19	**33**	**610**	NA
B-8-1.0	0 - 1.0	10/16/13	ND	220	180	290	60	6.7	11	**17**	**34**	**1200**	3700
B-8-2.0	1.0 - 2.0	10/16/13	NA	17	8.6	5.4	<40	<2	<2	<2	<2	**50**	NA
B-9-1.0	0 - 1.0	10/16/13	NA	<2	<2	<2	<39	<2	<2	<2	<2	<2	<320
B-10-1.0	0 - 1.0	10/16/13	NA	92	490	110	**3200**	**1100**	**800**	<2	<2	<2	<330
B-10-2.0	1.0 - 2.0	10/16/13	NA	120	170	<4	**720**	100	90	<4	<4	<4	NA
B-11-1.0	0 - 1.0	10/16/13	NA	25	16	<2	110	20	11	<2	3	**6.9**	<320
B-11-2.0	1.0 - 2.0	10/16/13	NA	10	8.9	4.6	<39	<2	<2	<2	<2	**3.3**	NA
B-12-1.0	0 - 1.0	10/16/13	NA	310	55	10	<200	16	14	<9.8	<9.8	**300**	<330
B-12-2.0	1.0 - 2.0	10/16/13	NA	<2	<2	<2	<39	<2	<2	<2	<2	<2	NA
Residential ESL[3]			NE	1700	1700	2400	440	NE	NE	9.8	4.6	2.3	NE
Commercial/Industrial ESL[3]			NE	4000	4000	6000	950	NE	NE	9.8	4.6	2.3	NE
Residential CHHSL[4]			NE	1600	1600	2300	430	NE	NE	500	NE	35	NE
Commercial/Industrial CHHSL[4]			NE	6300	6300	9000	1700	NE	NE	2000	NE	130	NE

TABLE 1

DISCRETE SOIL ANALYTICAL RESULTS - ASBESTOS, PESTICIDES, and HERBICIDES[1]

17482 Boston Road and 278 Hampton Road
Hayward, California

Notes:

1. Only those detected compounds listed. A complete copy of the analytical laboratory report is included as Attachment 1.

2. There are numerous derivations of chlordane that can be found, of which alpha- and gamma-chlordane are reportedly the most persistent in the environment. Regulatory criteria used for chlordane is based on an additive compilation of these different derivations. According to the analytical laboratory, adding the concentrations of alpha and gamma-chlordane to arrive at a total chlordane level is an acceptable methodology and will thus provide a meaningful comparison to regulatory criteria as the ESLs and CHHSLs do not present alpha nor gamma-chlordane levels, just (technical or "total") chlordane.

3. ESLs = California Regional Water Quality Control Board - San Francisco Bay Region Environmental Screening Levels. Summary Tables B-1 (Residential Land Use) and B-2 (Commercial/Industrial Land Use) were used for shallow soils (≤3 m bgs) where groundwater is not a current or potential source of drinking water, Interim Final - May 2013.

4. Office of Environmental Health Hazard Asessment, California Human Health Screening Levels (CHHSLs), Table 1 - Soil-Screening Numbers (mg/kg of dry soil) for Nonvolatile Chemicals Based on Total Exposure to Contaminated Soil: Inhalation, Ingestion and Dermal Absorption, September 23, 2010.

Abbreviations:

ug/kg = micrograms per kilogram

NA = Not analyzed for constituent listed

NE = No established level

ESL = Environmental Screening Level

CHHSL = California Human Health Screening Level

TABLE 2

DISCRETE SOIL ANALYTICAL RESULTS - METALS[1]

17482 Boston Road and 278 Hampton Road
Hayward, California

			results in mg/kg									
Sample Name	**Sample Depth (ft bgs)**	**Sample Date**	**Lead**	**Cadmium**	**Nickel**	**Total Chromium**	**Hexavalent Chromium**	**Arsenic**	**Barium**	**Silver**	**Selenium**	**Mercury**
B-1-1.0	0 - 1.0	10/16/13	65	<0.46	21	21	NA	**4.4**	110	<0.93	<3.7	0.065
B-2-1.0	0 - 1.0	10/16/13	**1400**	3.4	35	35	NA	**6.8**	380	<0.92	<3.7	0.40
B-2-2.0	1.0 - 2.0	10/16/13	**350**	1.4	NA	NA	NA	**5.2**	NA	NA	NA	NA
B-3-1.0	0 - 1.0	10/16/13	**670**	1.0	35	36	NA	**4.9**	390	<0.91	<3.6	0.20
B-3-2.0	1.0 - 2.0	10/16/13	**140**	NA	NA	NA	NA	**5.0**	NA	NA	NA	0.073
B-4-1.0	0 - 1.0	10/16/13	55	0.46	41	41	NA	**9.0**	170	<0.85	<3.4	0.12
B-5-1.0	0 - 1.0	10/16/13	**84**	0.49	42	41	<2.0	**6.6**	180	<0.88	<3.5	0.12
B-5-2.0	1.0 - 2.0	10/16/13	16	NA	NA	NA	NA	**5.9**	NA	NA	NA	NA
B-6-1.0	0 - 1.0	10/16/13	38	<0.43	39	39	NA	**5.2**	160	<0.87	<3.5	0.075
B-7-1.0	0 - 1.0	10/16/13	**100**	0.82	28	28	NA	**12**	220	<0.72	<2.9	0.35
B-7-2.0	1.0 - 2.0	10/16/13	**93**	NA	NA	NA	NA	**6.7**	NA	NA	NA	NA
B-8-1.0	0 - 1.0	10/16/13	**110**	0.53	42	39	<1.9	**8.6**	270	<0.93	<3.7	0.081
B-8-2.0	1.0 - 2.0	10/16/13	12	NA	NA	NA	NA	**6.7**	NA	NA	NA	NA
B-9-1.0	0 - 1.0	10/16/13	71	<0.49	NA	46	NA	**17**	180	<0.97	<3.9	0.063
B-10-1.0	0 - 1.0	10/16/13	**440**	1.9	NA	46	NA	**47**	310	<0.97	<3.9	0.11
B-10-2.0	1.0 - 2.0	10/16/13	36	NA	NA	NA	NA	**45**	NA	NA	NA	NA
B-11-1.0	0 - 1.0	10/16/13	**130**	<0.46	NA	38	NA	**8.3**	170	<0.92	<3.7	0.18
B-11-2.0	1.0 - 2.0	10/16/13	**330**	NA	NA	NA	NA	**5.8**	NA	NA	NA	NA
B-12-1.0	0 - 1.0	10/16/13	**630**	0.91	NA	200	<2.0	**7.8**	**930**	<0.95	<3.8	0.13
B-12-2.0	1.0 - 2.0	10/16/13	10	NA	NA	36	NA	**5.9**	140	NA	NA	NA
Residential ESL[2]			80	12	150	1000[3]	8	0.39	750	20	10	6.7
Commercial/Industrial ESL[2]			320	12	150	2500[3]	8	0.96	1500	40	10	10
Residential CHHSL[4]			80	1.7	1600	NE[5]	17	0.07	5200	380	380	18
Commercial/Industrial CHHSL[4]			320	7.5	16000	NE[5]	37	0.24	63000	4800	4800	180

TABLE 2

DISCRETE SOIL ANALYTICAL RESULTS - METALS[1]

17482 Boston Road and 278 Hampton Road
Hayward, California

Notes:

1. Only those detected compounds listed. A complete copy of the analytical laboratory report is included as Attachment 1.

2. ESLs = California Regional Water Quality Control Board - San Francisco Bay Region Environmental Screening Levels. Summary Tables B-1 (Residential Land Use) and B-2 (Commercial/Industrial Land Use) were used for shallow soils (≤3 m bgs) where groundwater is not a current or potential source of drinking water, Interim Final - May 2013.

3. ESLs, Table B-1, do not establish a level for total chromium. ESL for Chromium III is 750 mg/kg for both residential and industrial land use. ESL for Chomium VI is 8 mg/kg for both residential and industrial land use. ESLs, Table H-2, establishes a "ceiling level" for total chromium at 1000 mg/kg for residential land use and 2500 mg/kg for industrial land use and is based on eco-toxicity.

4. Office of Environmental Health Hazard Asessment, California Human Health Screening Levels (CHHSLs), Table 1 - Soil-Screening Numbers (mg/kg of dry soil) for Nonvolatile Chemicals Based on Total Exposure to Contaminated Soil: Inhalation, Ingestion and Dermal Absorption, September 23, 2010.

5. CHHSLs do not establish a level for total chromium. CHHSL for Chromium III is 100,000 mg/kg for both residential and industrial land use. CHHSL for Chromium VI is 17 mg/kg for residential land use and 37 mg/kg for industrial land use.

Abbreviations:

mg/kg = milligrams per kilogram

NA = Not analyzed for constituent listed

NE = No established level

ESL = Environmental Screening Level

CHHSL = California Human Health Screening Level

TABLE 3
COMPOSITE SOIL ANALYTICAL RESULTS - LEAD and ASBESTOS

17482 Boston Road and 278 Hampton Road
Hayward, California

Sample Name	Sample Date	Lead (mg/kg)	Asbestos
278 Hampton Road Samples[1]			
1	10/10/13	**490**	ND
2	10/10/13	**350**	ND
3	10/10/13	**210**	ND
4	10/10/13	**710**	ND
5	10/10/13	**1500**	ND
6	10/10/13	**1800**	ND
7	10/10/13	**1100**	ND
8	10/10/13	**330**	ND
9	10/10/13	**270**	ND
10	10/10/13	**1100**	ND
17482 Boston Road Samples[1]			
1	10/16/13	**200**	ND
2	10/16/13	**1800**	ND
3	10/16/13	**370**	ND
4	10/16/13	70	ND
Residential ESL[2]		80	NE
Commercial/Industrial ESL[2]		320	NE
Residential CHHSL[3]		80	NE
Commercial/Industrial CHHSL[3]		320	NE

Notes:

1. For purposes of clarity and simplicity, the sample names were shortened for presentation on this Table 3. A complete copy of the analytical laboratory report is included as Attachment 4.

2. ESLs = California Regional Water Quality Control Board - San Francisco Bay Region Environmental Screening Levels. Summary Tables B-1 (Residential Land Use) and B-2 (Commercial/Industrial Land Use) were used for shallow soils (≤3 m bgs) where groundwater is not a current or potential source of drinking water, Interim Final - May 2013.

3. Office of Environmental Health Hazard Asessment, California Human Health Screening Levels (CHHSLs), Table 1 - Soil-Screening Numbers (mg/kg of dry soil) for Nonvolatile Chemicals Based on Total Exposure to Contaminated Soil: Inhalation, Ingestion and Dermal Absorption, September 23, 2010.

Abbreviations:

mg/kg = milligrams per kilogram

NA = Not analyzed for constituent listed

NE = No established level

ESL = Environmental Screening Level

CHHSL = California Human Health Screening Level

J R ASSOCIATES

Engineering Geophysics
1886 Emory Street
San Jose, CA 95126
(408) 293-7390

MAGNETIC INVESTIGATION AT
17482 BOSTON ROAD AND 278 HAMPTON ROAD
HAYWARD, CALIFORNIA

October 25, 2013

For

Vista Environmental Consulting
2984 Teagarden Street
San Leandro, California 94577

By

James Rezowalli, GP-921

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

I INTRODUCTION

This report presents the results of a geophysical investigation performed at 17482 Boston Road and 278 Hampton Road in Hayward, California. The investigation was performed for Vista Environmental Consulting by J R Associates. The purpose of the investigation was to look for geophysical indications of buried metal objects. James Rezowalli, Principal Geophysicist, and Brian Rezowalli, Technician, of J R Associates performed the field work in October of 2013.

A. Site

The site consists of two properties, one is off Hampton Road and the other is off Boston Road in Hayward, California (Drawing 1). The property off Boston Road is a single family residence and the property off Hampton is an empty lot. A single family residence once occupied the empty lot. Remnants of concrete pads and hose bibs could still be seen on the Hampton Road property. The purpose of our magnetic investigation was to look for geophysical indications of buried metal objects. Encountering buried objects like old tanks, buried trash, and old wells can hinder future redevelopment. Encountering unexpected buried objects can slow reconstruction and add to its cost.

II METHODS

We performed a magnetic investigation at the site. A magnetic investigation maps the earth's vertical magnetic gradient. The magnetic gradient is uniform throughout a site free of metal. The magnetic gradient at a site that contains ferrous metal is not uniform. Metal objects produce magnetic anomalies with characteristic shapes and magnitudes. For example, an anomaly caused by a buried fuel storage tank is characterized by a strong magnetic low just south of the center of the tank and a weaker magnetic high just north of the tank. This type of anomaly is what we use to locate buried fuel storage tanks.

A. Magnetic Instrumentation

We used a Geometrics model 856 proton precession magnetometer to collect magnetic data at the site. The magnetometer had two sensors and an electronics package. The magnetometer collected both total field data and vertical gradient data. The magnetometer can discriminate to 0.1 gammas in a total field of 40,000 to 60,000 gammas. Magnetic readings were stored in memory with the time of day, station numbers, and line numbers of the readings. The data were downloaded to a computer and contoured.

B. Magnetic Field Procedures

The area where magnetic data were collected is shown on Drawing 2. Magnetic data were collected at 10-foot intervals along lines spaced 10 feet apart in accessible areas of the site. At the end of the field day the magnetic data were downloaded and contoured. An anomaly is indicated by a series of concentric magnetic contours.

.

III RESULTS

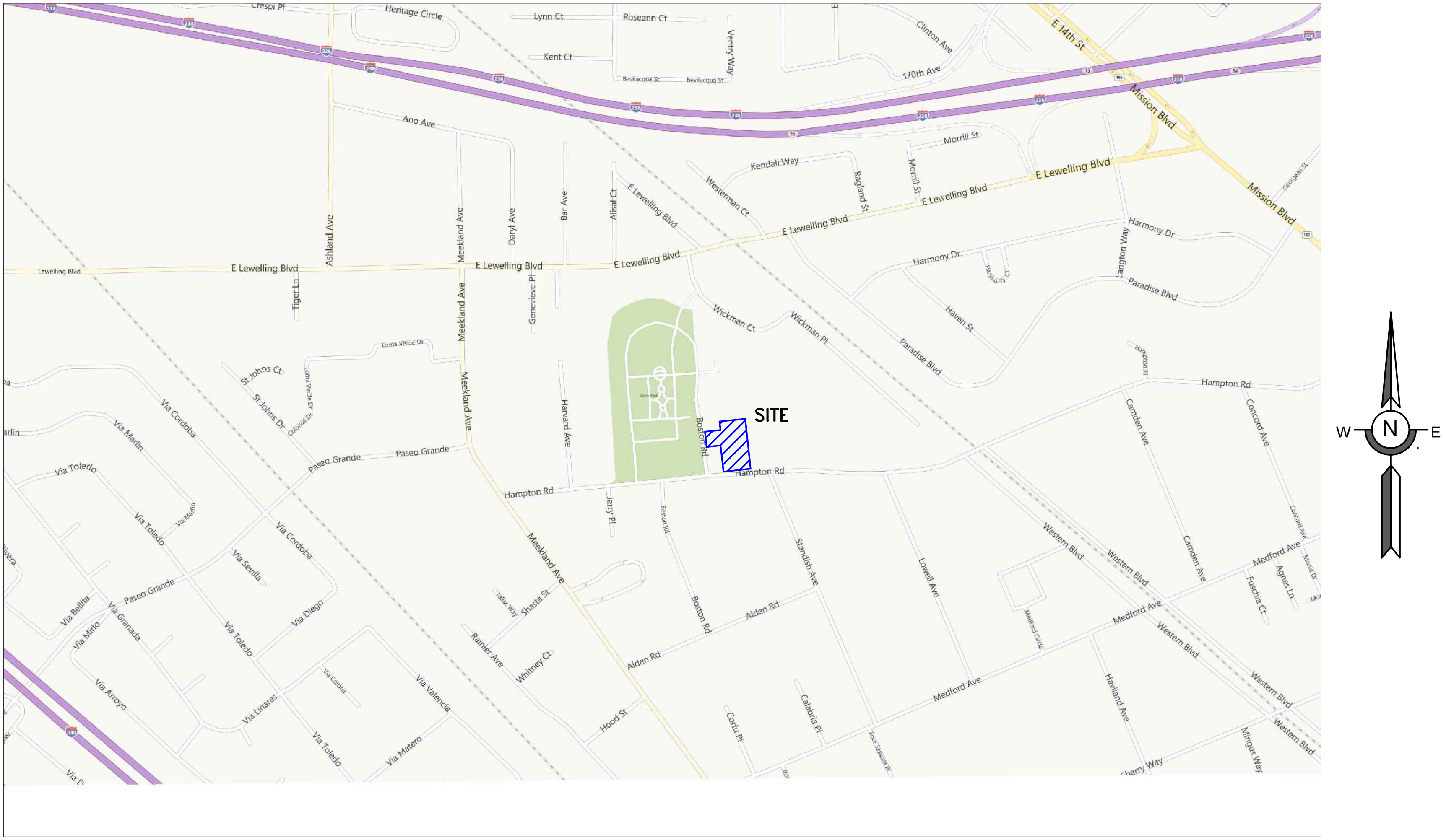
A. Magnetic Anomalies

Drawing 2 shows the contour map of the magnetic data collected at the property. There were several magnetic anomalies at the site. Most of the anomalies were caused by the cyclone fences surrounding the site. Some anomalies were caused by the house and shed on the Boston road property. Other anomalies were caused by buried pipes. The pipes appeared to be water lines and were probably part of an irrigation system on the Hampton Road property. We found one area with four small anomalies that were from buried metal. The area was in the middle of the Hampton Road property and is shown in red on Drawing 2. The anomalies were marked with green pin flags in the field. Usually anomalies like these are caused by debris left over from the demolition of buildings. Occasionally they are caused from buried trash pits or old heating oil tanks. Typically the objects that cause anomalies like these are buried within three feet of the ground surface. We recommend potholing the four anomalies to determine their cause.

B. Limitations

Magnetic methods locate ferrous objects from the anomalies they produce in the earth's magnetic field. It is possible some ferrous objects will not produce an anomaly. Some possible reasons are that the object is buried too deep, the object is too small, the object is buried under or near another metal object, or an object is buried near a utility. It is possible there are materials buried at the site that were not detected by the magnetometer. We recommend rerunning the magnetic survey after the surface metal has been removed.

IV DRAWINGS



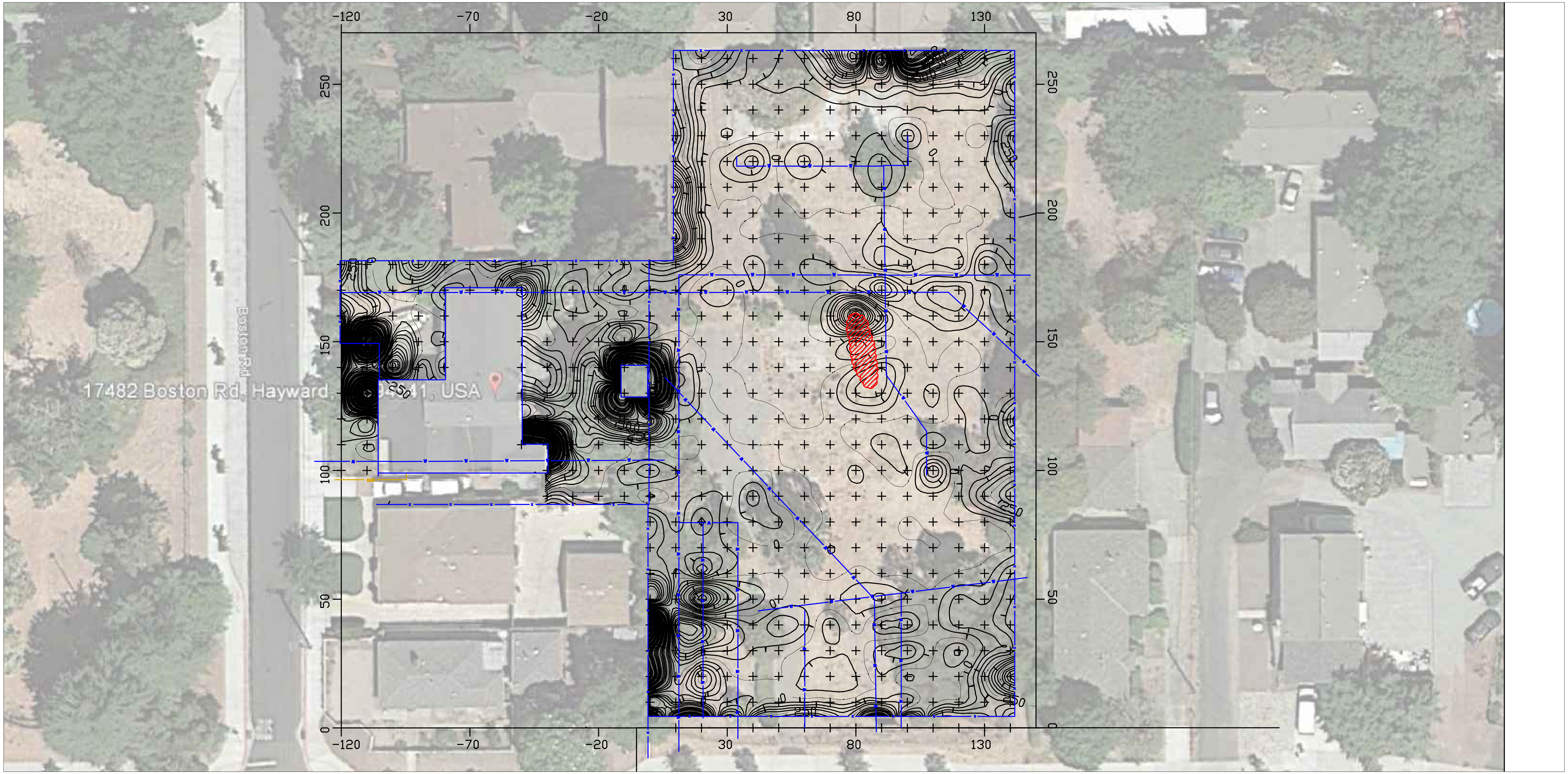
Vicinity Map

17482 Boston Road and 278 Hampton Road
Hayward, California

SCALE: No Scale		DRAWN BY: J.J.R.	
DATE: 10-21-2013	JOB NUMBER: 144-310-13	REVISED:	

J R Associates Civil and Environmental Geophysics
1886 Emory Street, San Jose, CA (408) 293-7390

DRAWING NUMBER: 1



EXPLANATION:

—W—	BURIED WATER
▭	VEHICLE
🟥	MAGNETIC ANOMALY INDICATIVE OF BURIED METAL

NOTE: THIS DRAWING SHOWS THE APPROXIMATE LOCATIONS OF UTILITIES FOUND DURING OUR INVESTIGATION. THERE MAY BE ADDITIONAL UTILITIES AND PIPES THAT WERE NOT DETECTED DURING OUR INVESTIGATION AND ARE NOT SHOWN ON THIS DRAWING.

Magnetic Contour Map
17482 Boston Road and 278 Hampton Road
Hayward, California

SCALE: 1" = 40'
DRAWN BY: J.J.R.
DATE: 10-21-2013
JOB NUMBER: 144-310-13
REVISED:

J R Associates Civil and Environmental Geophysics
1886 Emory Street, San Jose, CA (408) 293-7390

DRAWING NUMBER: 2

Vista Environmental Consulting, Inc.
2984 Teagarden Street
San Leandro, CA

DAILY FIELD RECORD

Page 1 of ___

Project and Task Number:

Date: 10/16/13

Project Name: Hampton / Boston Rd Sites

Field Activity: Soil Sampling

Location: Hayward, CA

Weather: Clears, 50's, 0-5 mph

PERSONNEL: Name	Company	Time In	Time Out
Charles Rome (CFR)	Vista Environmental Consulting, Inc.	0650	
Luis Rocha (LR)	"	0655	1000
Jason Garison	Alameda County	1100	1140

PERSONAL SAFETY CHECKLIST

X	Steel-toed Boots		Hard Hat		Tyvek Coveralls
X	Rubber Gloves	X	Safety Goggles/vest		1/2-Face Respirator

DRUM I.D.	DESCRIPTION OF CONTENTS AND QUANTITY	LOCATION

TIME	DESCRIPTION OF WORK PERFORMED
0650	CFR onsite, prep for days activities
0655	LR onsite. Set up decon. DI + Aloconox, followed by
	DI water rinse.
	*Sample will be collect using a clean hang auger. Soil interval
	collect will by 0-1 ft bgs (1.0 sample) and 1.0 - 2.0 ft
	bgs (2.0 sample). Intervals will be composited in a clean
	Stainless steel bowl and collected into lab supplied 16oz glass
	jar and 4oz glass jar.
0720	Collect soil sample B-9-1.0 } Frontyard of house brown silt
0735	" " " B-9-2.0
0740	" " " B-10-1.0 } Planter next to driveway brown silt
0755	" " " B-10-2.0
0805	" " " B-11-1.0 } Backyard brown silt
0810	" " " B-11-2.0

DAILY FIELD RECORD (continued)

Page 2 of ____

Project Name: Boston/Hampton Site Hayward, CA

Date: 10/16/13

TIME	DESCRIPTION OF WORK PERFORMED
0820	" " " B-12-1.0
0825	B-12-2.0
0830-0900	Help Luis take pd +asbestos samples from N, S, E, W side of
	house under drip line. 3 surface samples composited into one
	sample at each side.
0905	Begin cleanup and prep to mob to Hampton Rd.
0920	Set up to sample location B-1 at Hampton Rd
0935	B-1-1.0] Brown silt w/sand + gravel
0940	B-1-2.0
0950	B-2-1.0] brown silt w/ bldg debris wood
0955	B-2-2.0
1000	Luis offsite
1005	B-3-1.0] brown silt w/ bldg debris wood, stucco?
1010	B-3-2.0
1025	B-4-1.0] Brown silt w/ possible stucco? concrete?
1030	B-4-2.0
1045	B-5-1.0] Brown silt
1050	B-5-2.0
1100	Jason Garison onsite
1125	B-6-1.0] Brown silt
1130	B-6-2.0
1140	Jason Garson offsite
1145	B-7-1.0] Brow silt w/ sand + Gravel
1150	B-7-2.0
1220	B-8-1.0] Brown silt
1230	B-8-2.0
1300	site clean, paperwork complete, CFR offsite.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-53093-1
Client Project/Site: Boston/Hampton Road Sites
Revision: 1

For:
Vista Environmental Consulting, Inc
2984 Teagarden Street
San Leandro, California 94577

Attn: Jeff Austin

Authorized for release by:
10/28/2013 4:16:40 PM

Dimple Sharma, Project Manager I
(925)484-1919
dimple.sharma@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
F	MS/MSD Recovery and/or RPD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Job ID: 720-53093-1

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative
720-53093-1

Comments
No additional comments.

Receipt
The samples were received on 10/16/2013 5:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.6º C and 4.7º C.

GC Semi VOA
Method 8151A: Due to the level of dilution required for the following sample, surrogate recoveries are not reported: B-8-1.0 (720-53093-15).

Method 8151A: The matrix spike (MS) recovery for batch 207861 was outside control limits for 2,4-D. The associated laboratory control sample (LCS) recovery met acceptance criteria. B-1-1.0 (720-53093-1)

Method 8081A: The matrix spike / matrix spike duplicate (MS/MSD) percent recoveries and %RPD for batch 146662 were outside control limits due to matrix interference.

Method 8081A: Due to the level of dilution required for the following sample, surrogate recoveries are not reported: B-10-1.0 (720-53093-19), B-7-1.0 (720-53093-13), B-8-1.0 (720-53093-15).

Method 8081A: The % RPD between the primary and confirmation columns is >40% for sample B-2-1.0 (720-53093-3). Due to the coelution of a non-target peak, the lower value has been reported instead of the higher value for the following compounds:DDD

Method 8081A: The % RPD between the primary and confirmation columns is >40% for sample B-4-1.0 (720-53093-7). Due to the coelution of a non-target peak, the lower value has been reported instead of the higher value for the following compounds: DDT

Method 8081A: The % RPD between the primary and confirmation columns is >40% for sample B-10-1.0 (720-53093-19). Due to the coelution of a non-target peak, the lower value has been reported instead of the higher value for the following compounds:DDD

Method 8081A: Surrogate recovery for the following sample was outside control limits: B-12-1.0 (720-53093-23). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8081A: The % RPD between the primary and confirmation columns is >40% for sample B-11-1.0 (720-53093-21). Due to the coelution of a non-target peak, the lower value has been reported instead of the higher value for the following compounds: Alpha-chlodane & gamma-chlodane.

Method 8081A: The % RPD between the primary and confirmation columns is >40% for sample B-12-1.0 (720-53093-23). Due to the coelution of a non-target peak, the lower value has been reported instead of the higher value for the following compounds: DDD.

Method 8081A: The matrix spike / matrix spike duplicate (MS/MSD) percent recoveries and %RPD for batch #146684 were outside control limits. This is attributed to: non-homogeneity of the sample matrix; abundance of target analytes at concentrations significantly higher than the spike concentration; matrix interferences; etc.>>

No other analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

Organic Prep
No analytical or quality issues were noted.

Detection Summary

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-1

Client Sample ID: B-1-1.0 Lab Sample ID: 720-53093-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4,4'-DDT	10		2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDE	14		2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDD	3.8	p	2.0		ug/Kg	1		8081A	Total/NA
alpha-Chlordane	2.5	p	2.0		ug/Kg	1		8081A	Total/NA
Lead	65		1.9		mg/Kg	4		6010B	Total/NA
Nickel	21		1.9		mg/Kg	4		6010B	Total/NA
Chromium	21		1.9		mg/Kg	4		6010B	Total/NA
Arsenic	4.4		3.7		mg/Kg	4		6010B	Total/NA
Barium	110		1.9		mg/Kg	4		6010B	Total/NA
Mercury	0.065		0.0086		mg/Kg	1		7471A	Total/NA

Client Sample ID: B-2-1.0 Lab Sample ID: 720-53093-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dieldrin	3.4		2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDT	6.5		2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDE	2.4		2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDD	2.7	p	2.0		ug/Kg	1		8081A	Total/NA
Lead	1400		1.8		mg/Kg	4		6010B	Total/NA
Cadmium	3.4		0.46		mg/Kg	4		6010B	Total/NA
Nickel	35		1.8		mg/Kg	4		6010B	Total/NA
Chromium	35		1.8		mg/Kg	4		6010B	Total/NA
Arsenic	6.8		3.7		mg/Kg	4		6010B	Total/NA
Barium	380		1.8		mg/Kg	4		6010B	Total/NA
Mercury	0.40		0.0091		mg/Kg	1		7471A	Total/NA

Client Sample ID: B-3-1.0 Lab Sample ID: 720-53093-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dieldrin	13		2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDT	16		2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDE	3.1		2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDD	14		2.0		ug/Kg	1		8081A	Total/NA
Lead	670		1.8		mg/Kg	4		6010B	Total/NA
Cadmium	1.0		0.45		mg/Kg	4		6010B	Total/NA
Nickel	35		1.8		mg/Kg	4		6010B	Total/NA
Chromium	36		1.8		mg/Kg	4		6010B	Total/NA
Arsenic	4.9		3.6		mg/Kg	4		6010B	Total/NA
Barium	390		1.8		mg/Kg	4		6010B	Total/NA
Mercury	0.20		0.0091		mg/Kg	1		7471A	Total/NA

Client Sample ID: B-4-1.0 Lab Sample ID: 720-53093-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4,4'-DDT	2.4	p	2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDE	2.9		2.0		ug/Kg	1		8081A	Total/NA
Lead	55		1.7		mg/Kg	4		6010B	Total/NA
Cadmium	0.46		0.42		mg/Kg	4		6010B	Total/NA
Nickel	41		1.7		mg/Kg	4		6010B	Total/NA
Chromium	41		1.7		mg/Kg	4		6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: B-4-1.0 (Continued) Lab Sample ID: 720-53093-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	9.0		3.4		mg/Kg	4		6010B	Total/NA
Barium	170		1.7		mg/Kg	4		6010B	Total/NA
Mercury	0.12		0.0095		mg/Kg	1		7471A	Total/NA

Client Sample ID: B-5-1.0 Lab Sample ID: 720-53093-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dieldrin	180		2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDT	46		2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDE	95		2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDD	51		2.0		ug/Kg	1		8081A	Total/NA
Lead	84		1.8		mg/Kg	4		6010B	Total/NA
Cadmium	0.49		0.44		mg/Kg	4		6010B	Total/NA
Nickel	42		1.8		mg/Kg	4		6010B	Total/NA
Chromium	41		1.8		mg/Kg	4		6010B	Total/NA
Arsenic	6.6		3.5		mg/Kg	4		6010B	Total/NA
Barium	180		1.8		mg/Kg	4		6010B	Total/NA
Mercury	0.12		0.0098		mg/Kg	1		7471A	Total/NA

Client Sample ID: B-6-1.0 Lab Sample ID: 720-53093-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dieldrin	3.2		2.0		ug/Kg	1		8081A	Total/NA
Lead	38		1.7		mg/Kg	4		6010B	Total/NA
Nickel	39		1.7		mg/Kg	4		6010B	Total/NA
Chromium	39		1.7		mg/Kg	4		6010B	Total/NA
Arsenic	5.2		3.5		mg/Kg	4		6010B	Total/NA
Barium	160		1.7		mg/Kg	4		6010B	Total/NA
Mercury	0.075		0.0097		mg/Kg	1		7471A	Total/NA

Client Sample ID: B-7-1.0 Lab Sample ID: 720-53093-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dieldrin	1100		20		ug/Kg	10		8081A	Total/NA
4,4'-DDT	77		2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDE	36		2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDD	75	p	2.0		ug/Kg	1		8081A	Total/NA
Endosulfan sulfate	33		2.0		ug/Kg	1		8081A	Total/NA
Chlordane (technical)	63	p	40		ug/Kg	1		8081A	Total/NA
alpha-Chlordane	2.4	p	2.0		ug/Kg	1		8081A	Total/NA
gamma-Chlordane	3.7		2.0		ug/Kg	1		8081A	Total/NA
Lead	100		1.4		mg/Kg	4		6010B	Total/NA
Cadmium	0.82		0.36		mg/Kg	4		6010B	Total/NA
Nickel	28		1.4		mg/Kg	4		6010B	Total/NA
Chromium	28		1.4		mg/Kg	4		6010B	Total/NA
Arsenic	12		2.9		mg/Kg	4		6010B	Total/NA
Barium	220		1.4		mg/Kg	4		6010B	Total/NA
Mercury	0.35		0.0092		mg/Kg	1		7471A	Total/NA

Client Sample ID: B-8-1.0 Lab Sample ID: 720-53093-15

Detection Summary

Client Sample ID: B-8-1.0 (Continued) Lab Sample ID: 720-53093-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dieldrin	1200		19		ug/Kg	10		8081A	Total/NA
4,4'-DDT	220		1.9		ug/Kg	1		8081A	Total/NA
4,4'-DDE	180		1.9		ug/Kg	1		8081A	Total/NA
4,4'-DDD	290		1.9		ug/Kg	1		8081A	Total/NA
gamma-BHC (Lindane)	17		1.9		ug/Kg	1		8081A	Total/NA
Endosulfan sulfate	34		1.9		ug/Kg	1		8081A	Total/NA
Chlordane (technical)	60	p	39		ug/Kg	1		8081A	Total/NA
alpha-Chlordane	6.7	p	1.9		ug/Kg	1		8081A	Total/NA
gamma-Chlordane	11		1.9		ug/Kg	1		8081A	Total/NA
Dicamba - DL	3700		1600		ug/Kg	50		8151A	Total/NA
Lead	110		1.9		mg/Kg	4		6010B	Total/NA
Cadmium	0.53		0.46		mg/Kg	4		6010B	Total/NA
Nickel	42		1.9		mg/Kg	4		6010B	Total/NA
Chromium	39		1.9		mg/Kg	4		6010B	Total/NA
Arsenic	8.6		3.7		mg/Kg	4		6010B	Total/NA
Barium	270		1.9		mg/Kg	4		6010B	Total/NA
Mercury	0.081		0.0095		mg/Kg	1		7471A	Total/NA

Client Sample ID: B-9-1.0 Lab Sample ID: 720-53093-17

No Detections.

Client Sample ID: B-10-1.0 Lab Sample ID: 720-53093-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4,4'-DDT	92		2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDE	490		20		ug/Kg	10		8081A	Total/NA
4,4'-DDD	110	p	2.0		ug/Kg	1		8081A	Total/NA
Chlordane (technical)	3200		400		ug/Kg	10		8081A	Total/NA
alpha-Chlordane	1100		20		ug/Kg	10		8081A	Total/NA
gamma-Chlordane	800		20		ug/Kg	10		8081A	Total/NA

Client Sample ID: B-11-1.0 Lab Sample ID: 720-53093-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dieldrin	6.9		2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDT	25		2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDE	16		2.0		ug/Kg	1		8081A	Total/NA
Endosulfan sulfate	3.0		2.0		ug/Kg	1		8081A	Total/NA
Chlordane (technical)	110		40		ug/Kg	1		8081A	Total/NA
alpha-Chlordane	20	p	2.0		ug/Kg	1		8081A	Total/NA
gamma-Chlordane	11	p	2.0		ug/Kg	1		8081A	Total/NA

Client Sample ID: B-12-1.0 Lab Sample ID: 720-53093-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dieldrin	300		9.8		ug/Kg	5		8081A	Total/NA
4,4'-DDT	310		9.8		ug/Kg	5		8081A	Total/NA
4,4'-DDE	55		9.8		ug/Kg	5		8081A	Total/NA
4,4'-DDD	10	p	9.8		ug/Kg	5		8081A	Total/NA
alpha-Chlordane	16	p	9.8		ug/Kg	5		8081A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: B-12-1.0 (Continued)

Lab Sample ID: 720-53093-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
gamma-Chlordane	14		9.8		ug/Kg	5		8081A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: B-1-1.0

Date Collected: 10/16/13 09:35
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-1
Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
Dieldrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
Endrin aldehyde	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
Endrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
Endrin ketone	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
Heptachlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
Heptachlor epoxide	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
4,4'-DDT	**10**		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
4,4'-DDE	**14**		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
4,4'-DDD	**3.8**	**p**	2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
Endosulfan I	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
Endosulfan II	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
alpha-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
beta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
delta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
Endosulfan sulfate	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
Methoxychlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
Toxaphene	ND		40		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
Chlordane (technical)	ND		40		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
alpha-Chlordane	**2.5**	**p**	2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1
gamma-Chlordane	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*88*		*57 - 122*	*10/21/13 11:21*	*10/22/13 02:02*	*1*
DCB Decachlorobiphenyl	*113*		*21 - 136*	*10/21/13 11:21*	*10/22/13 02:02*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dicamba	ND		330		ug/Kg		10/21/13 00:26	10/22/13 06:20	10
Dichlorprop	ND		330		ug/Kg		10/21/13 00:26	10/22/13 06:20	10
2,4-D	ND		330		ug/Kg		10/21/13 00:26	10/22/13 06:20	10
Silvex (2,4,5-TP)	ND		330		ug/Kg		10/21/13 00:26	10/22/13 06:20	10
2,4,5-T	ND		330		ug/Kg		10/21/13 00:26	10/22/13 06:20	10
2,4-DB	ND		330		ug/Kg		10/21/13 00:26	10/22/13 06:20	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*66*		*32 - 122*	*10/21/13 00:26*	*10/22/13 06:20*	*10*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**65**		1.9		mg/Kg		10/18/13 21:56	10/21/13 17:49	4
Cadmium	ND		0.46		mg/Kg		10/18/13 21:56	10/21/13 17:49	4
Nickel	**21**		1.9		mg/Kg		10/18/13 21:56	10/21/13 17:49	4
Chromium	**21**		1.9		mg/Kg		10/18/13 21:56	10/21/13 17:49	4
Arsenic	**4.4**		3.7		mg/Kg		10/18/13 21:56	10/21/13 17:49	4
Barium	**110**		1.9		mg/Kg		10/18/13 21:56	10/21/13 17:49	4
Silver	ND		0.93		mg/Kg		10/18/13 21:56	10/21/13 17:49	4
Selenium	ND		3.7		mg/Kg		10/18/13 21:56	10/21/13 17:49	4

Client Sample Results

Client Sample ID: B-1-1.0
Date Collected: 10/16/13 09:35
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-1
Matrix: Solid

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.065**		0.0086		mg/Kg		10/24/13 22:09	10/25/13 15:38	1

Client Sample ID: B-2-1.0

Date Collected: 10/16/13 09:50
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-3
Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
Dieldrin	**3.4**		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
Endrin aldehyde	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
Endrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
Endrin ketone	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
Heptachlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
Heptachlor epoxide	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
4,4'-DDT	**6.5**		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
4,4'-DDE	**2.4**		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
4,4'-DDD	**2.7**	**p**	2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
Endosulfan I	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
Endosulfan II	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
alpha-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
beta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
delta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
Endosulfan sulfate	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
Methoxychlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
Toxaphene	ND		40		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
Chlordane (technical)	ND		40		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
alpha-Chlordane	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1
gamma-Chlordane	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*82*		*57 - 122*	*10/21/13 11:21*	*10/22/13 02:18*	*1*
DCB Decachlorobiphenyl	*131*		*21 - 136*	*10/21/13 11:21*	*10/22/13 02:18*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dicamba	ND		320		ug/Kg		10/21/13 00:26	10/22/13 07:28	10
Dichlorprop	ND		320		ug/Kg		10/21/13 00:26	10/22/13 07:28	10
2,4-D	ND		320		ug/Kg		10/21/13 00:26	10/22/13 07:28	10
Silvex (2,4,5-TP)	ND		320		ug/Kg		10/21/13 00:26	10/22/13 07:28	10
2,4,5-T	ND		320		ug/Kg		10/21/13 00:26	10/22/13 07:28	10
2,4-DB	ND		320		ug/Kg		10/21/13 00:26	10/22/13 07:28	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*59*		*32 - 122*	*10/21/13 00:26*	*10/22/13 07:28*	*10*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**1400**		1.8		mg/Kg		10/18/13 21:56	10/21/13 18:01	4
Cadmium	**3.4**		0.46		mg/Kg		10/18/13 21:56	10/21/13 18:01	4
Nickel	**35**		1.8		mg/Kg		10/18/13 21:56	10/21/13 18:01	4
Chromium	**35**		1.8		mg/Kg		10/18/13 21:56	10/21/13 18:01	4
Arsenic	**6.8**		3.7		mg/Kg		10/18/13 21:56	10/21/13 18:01	4
Barium	**380**		1.8		mg/Kg		10/18/13 21:56	10/21/13 18:01	4
Silver	ND		0.92		mg/Kg		10/18/13 21:56	10/21/13 18:01	4
Selenium	ND		3.7		mg/Kg		10/18/13 21:56	10/21/13 18:01	4

Client Sample Results

Client Sample ID: B-2-1.0
Date Collected: 10/16/13 09:50
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-3
Matrix: Solid

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.40**		0.0091		mg/Kg		10/24/13 22:09	10/25/13 15:43	1

Client Sample Results

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-1

Client Sample ID: B-3-1.0
Date Collected: 10/16/13 10:05
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-5
Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
Dieldrin	**13**		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
Endrin aldehyde	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
Endrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
Endrin ketone	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
Heptachlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
Heptachlor epoxide	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
4,4'-DDT	**16**		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
4,4'-DDE	**3.1**		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
4,4'-DDD	**14**		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
Endosulfan I	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
Endosulfan II	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
alpha-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
beta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
delta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
Endosulfan sulfate	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
Methoxychlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
Toxaphene	ND		40		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
Chlordane (technical)	ND		40		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
alpha-Chlordane	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1
gamma-Chlordane	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*93*		*57 - 122*	*10/21/13 11:21*	*10/22/13 02:35*	*1*
DCB Decachlorobiphenyl	*92*		*21 - 136*	*10/21/13 11:21*	*10/22/13 02:35*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dicamba	ND		330		ug/Kg		10/21/13 00:26	10/22/13 07:50	10
Dichlorprop	ND		330		ug/Kg		10/21/13 00:26	10/22/13 07:50	10
2,4-D	ND		330		ug/Kg		10/21/13 00:26	10/22/13 07:50	10
Silvex (2,4,5-TP)	ND		330		ug/Kg		10/21/13 00:26	10/22/13 07:50	10
2,4,5-T	ND		330		ug/Kg		10/21/13 00:26	10/22/13 07:50	10
2,4-DB	ND		330		ug/Kg		10/21/13 00:26	10/22/13 07:50	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*56*		*32 - 122*	*10/21/13 00:26*	*10/22/13 07:50*	*10*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**670**		1.8		mg/Kg		10/18/13 21:56	10/21/13 18:06	4
Cadmium	**1.0**		0.45		mg/Kg		10/18/13 21:56	10/21/13 18:06	4
Nickel	**35**		1.8		mg/Kg		10/18/13 21:56	10/21/13 18:06	4
Chromium	**36**		1.8		mg/Kg		10/18/13 21:56	10/21/13 18:06	4
Arsenic	**4.9**		3.6		mg/Kg		10/18/13 21:56	10/21/13 18:06	4
Barium	**390**		1.8		mg/Kg		10/18/13 21:56	10/21/13 18:06	4
Silver	ND		0.91		mg/Kg		10/18/13 21:56	10/21/13 18:06	4
Selenium	ND		3.6		mg/Kg		10/18/13 21:56	10/21/13 18:06	4

Client Sample Results

Client Sample ID: B-3-1.0
Date Collected: 10/16/13 10:05
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-5
Matrix: Solid

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.20**		0.0091		mg/Kg		10/24/13 22:09	10/25/13 15:45	1

Client Sample Results

Client Sample ID: B-4-1.0

Lab Sample ID: 720-53093-7

Date Collected: 10/16/13 10:25
Date Received: 10/16/13 17:10

Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
Dieldrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
Endrin aldehyde	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
Endrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
Endrin ketone	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
Heptachlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
Heptachlor epoxide	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
4,4'-DDT	**2.4**	**p**	2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
4,4'-DDE	**2.9**		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
4,4'-DDD	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
Endosulfan I	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
Endosulfan II	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
alpha-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
beta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
delta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
Endosulfan sulfate	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
Methoxychlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
Toxaphene	ND		40		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
Chlordane (technical)	ND		40		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
alpha-Chlordane	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1
gamma-Chlordane	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 02:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*85*		*57 - 122*	*10/21/13 11:21*	*10/22/13 02:52*	*1*
DCB Decachlorobiphenyl	*97*		*21 - 136*	*10/21/13 11:21*	*10/22/13 02:52*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dicamba	ND		320		ug/Kg		10/21/13 00:26	10/22/13 08:12	10
Dichlorprop	ND		320		ug/Kg		10/21/13 00:26	10/22/13 08:12	10
2,4-D	ND		320		ug/Kg		10/21/13 00:26	10/22/13 08:12	10
Silvex (2,4,5-TP)	ND		320		ug/Kg		10/21/13 00:26	10/22/13 08:12	10
2,4,5-T	ND		320		ug/Kg		10/21/13 00:26	10/22/13 08:12	10
2,4-DB	ND		320		ug/Kg		10/21/13 00:26	10/22/13 08:12	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*58*		*32 - 122*	*10/21/13 00:26*	*10/22/13 08:12*	*10*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**55**		1.7		mg/Kg		10/18/13 21:56	10/21/13 18:10	4
Cadmium	**0.46**		0.42		mg/Kg		10/18/13 21:56	10/21/13 18:10	4
Nickel	**41**		1.7		mg/Kg		10/18/13 21:56	10/21/13 18:10	4
Chromium	**41**		1.7		mg/Kg		10/18/13 21:56	10/21/13 18:10	4
Arsenic	**9.0**		3.4		mg/Kg		10/18/13 21:56	10/21/13 18:10	4
Barium	**170**		1.7		mg/Kg		10/18/13 21:56	10/21/13 18:10	4
Silver	ND		0.85		mg/Kg		10/18/13 21:56	10/21/13 18:10	4
Selenium	ND		3.4		mg/Kg		10/18/13 21:56	10/21/13 18:10	4

Client Sample ID: B-4-1.0
Lab Sample ID: 720-53093-7
Date Collected: 10/16/13 10:25
Matrix: Solid
Date Received: 10/16/13 17:10

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.12**		0.0095		mg/Kg		10/24/13 22:09	10/25/13 15:47	1

Client Sample Results

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-1

Client Sample ID: B-5-1.0

Lab Sample ID: 720-53093-9

Date Collected: 10/16/13 10:45
Date Received: 10/16/13 17:10

Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
Dieldrin	**180**		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
Endrin aldehyde	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
Endrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
Endrin ketone	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
Heptachlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
Heptachlor epoxide	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
4,4'-DDT	**46**		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
4,4'-DDE	**95**		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
4,4'-DDD	**51**		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
Endosulfan I	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
Endosulfan II	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
alpha-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
beta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
delta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
Endosulfan sulfate	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
Methoxychlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
Toxaphene	ND		40		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
Chlordane (technical)	ND		40		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
alpha-Chlordane	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1
gamma-Chlordane	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*94*		*57 - 122*	*10/21/13 11:21*	*10/22/13 03:09*	*1*
DCB Decachlorobiphenyl	*112*		*21 - 136*	*10/21/13 11:21*	*10/22/13 03:09*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dicamba	ND		330		ug/Kg		10/21/13 00:26	10/22/13 08:35	10
Dichlorprop	ND		330		ug/Kg		10/21/13 00:26	10/22/13 08:35	10
2,4-D	ND		330		ug/Kg		10/21/13 00:26	10/22/13 08:35	10
Silvex (2,4,5-TP)	ND		330		ug/Kg		10/21/13 00:26	10/22/13 08:35	10
2,4,5-T	ND		330		ug/Kg		10/21/13 00:26	10/22/13 08:35	10
2,4-DB	ND		330		ug/Kg		10/21/13 00:26	10/22/13 08:35	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*60*		*32 - 122*	*10/21/13 00:26*	*10/22/13 08:35*	*10*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**84**		1.8		mg/Kg		10/18/13 21:56	10/21/13 18:14	4
Cadmium	**0.49**		0.44		mg/Kg		10/18/13 21:56	10/21/13 18:14	4
Nickel	**42**		1.8		mg/Kg		10/18/13 21:56	10/21/13 18:14	4
Chromium	**41**		1.8		mg/Kg		10/18/13 21:56	10/21/13 18:14	4
Arsenic	**6.6**		3.5		mg/Kg		10/18/13 21:56	10/21/13 18:14	4
Barium	**180**		1.8		mg/Kg		10/18/13 21:56	10/21/13 18:14	4
Silver	ND		0.88		mg/Kg		10/18/13 21:56	10/21/13 18:14	4
Selenium	ND		3.5		mg/Kg		10/18/13 21:56	10/21/13 18:14	4

Client Sample ID: B-5-1.0
Date Collected: 10/16/13 10:45
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-9
Matrix: Solid

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.12**		0.0098		mg/Kg		10/24/13 22:09	10/25/13 15:54	1

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

Client Sample ID: B-6-1.0

Lab Sample ID: 720-53093-11

Date Collected: 10/16/13 11:25

Matrix: Solid

Date Received: 10/16/13 17:10

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
Dieldrin	**3.2**		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
Endrin aldehyde	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
Endrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
Endrin ketone	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
Heptachlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
Heptachlor epoxide	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
4,4'-DDT	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
4,4'-DDE	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
4,4'-DDD	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
Endosulfan I	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
Endosulfan II	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
alpha-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
beta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
delta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
Endosulfan sulfate	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
Methoxychlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
Toxaphene	ND		40		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
Chlordane (technical)	ND		40		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
alpha-Chlordane	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1
gamma-Chlordane	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*98*		*57 - 122*	*10/21/13 11:21*	*10/22/13 03:26*	*1*
DCB Decachlorobiphenyl	*111*		*21 - 136*	*10/21/13 11:21*	*10/22/13 03:26*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dicamba	ND		330		ug/Kg		10/21/13 00:26	10/22/13 08:58	10
Dichlorprop	ND		330		ug/Kg		10/21/13 00:26	10/22/13 08:58	10
2,4-D	ND		330		ug/Kg		10/21/13 00:26	10/22/13 08:58	10
Silvex (2,4,5-TP)	ND		330		ug/Kg		10/21/13 00:26	10/22/13 08:58	10
2,4,5-T	ND		330		ug/Kg		10/21/13 00:26	10/22/13 08:58	10
2,4-DB	ND		330		ug/Kg		10/21/13 00:26	10/22/13 08:58	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*44*		*32 - 122*	*10/21/13 00:26*	*10/22/13 08:58*	*10*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**38**		1.7		mg/Kg		10/18/13 21:56	10/21/13 18:18	4
Cadmium	ND		0.43		mg/Kg		10/18/13 21:56	10/21/13 18:18	4
Nickel	**39**		1.7		mg/Kg		10/18/13 21:56	10/21/13 18:18	4
Chromium	**39**		1.7		mg/Kg		10/18/13 21:56	10/21/13 18:18	4
Arsenic	**5.2**		3.5		mg/Kg		10/18/13 21:56	10/21/13 18:18	4
Barium	**160**		1.7		mg/Kg		10/18/13 21:56	10/21/13 18:18	4
Silver	ND		0.87		mg/Kg		10/18/13 21:56	10/21/13 18:18	4
Selenium	ND		3.5		mg/Kg		10/18/13 21:56	10/21/13 18:18	4

Client Sample ID: B-6-1.0

Lab Sample ID: 720-53093-11

Date Collected: 10/16/13 11:25

Matrix: Solid

Date Received: 10/16/13 17:10

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.075**		0.0097		mg/Kg		10/24/13 22:09	10/25/13 15:57	1

Client Sample Results

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-1

Client Sample ID: B-7-1.0

Date Collected: 10/16/13 11:45
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-13

Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
Dieldrin	**1100**		20		ug/Kg		10/21/13 11:21	10/22/13 08:12	10
Endrin aldehyde	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
Endrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
Endrin ketone	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
Heptachlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
Heptachlor epoxide	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
4,4'-DDT	**77**		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
4,4'-DDE	**36**		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
4,4'-DDD	**75**	**p**	2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
Endosulfan I	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
Endosulfan II	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
alpha-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
beta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
delta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
Endosulfan sulfate	**33**		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
Methoxychlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
Toxaphene	ND		40		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
Chlordane (technical)	**63**	**p**	40		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
alpha-Chlordane	**2.4**	**p**	2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1
gamma-Chlordane	**3.7**		2.0		ug/Kg		10/21/13 11:21	10/22/13 03:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*87*		*57 - 122*	*10/21/13 11:21*	*10/22/13 03:43*	*1*
DCB Decachlorobiphenyl	*123*		*21 - 136*	*10/21/13 11:21*	*10/22/13 03:43*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dicamba	ND		330		ug/Kg		10/21/13 00:26	10/22/13 10:05	10
Dichlorprop	ND		330		ug/Kg		10/21/13 00:26	10/22/13 10:05	10
2,4-D	ND		330		ug/Kg		10/21/13 00:26	10/22/13 10:05	10
Silvex (2,4,5-TP)	ND		330		ug/Kg		10/21/13 00:26	10/22/13 10:05	10
2,4,5-T	ND		330		ug/Kg		10/21/13 00:26	10/22/13 10:05	10
2,4-DB	ND		330		ug/Kg		10/21/13 00:26	10/22/13 10:05	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*66*		*32 - 122*	*10/21/13 00:26*	*10/22/13 10:05*	*10*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**100**		1.4		mg/Kg		10/18/13 21:56	10/21/13 18:23	4
Cadmium	**0.82**		0.36		mg/Kg		10/18/13 21:56	10/21/13 18:23	4
Nickel	**28**		1.4		mg/Kg		10/18/13 21:56	10/21/13 18:23	4
Chromium	**28**		1.4		mg/Kg		10/18/13 21:56	10/21/13 18:23	4
Arsenic	**12**		2.9		mg/Kg		10/18/13 21:56	10/21/13 18:23	4
Barium	**220**		1.4		mg/Kg		10/18/13 21:56	10/21/13 18:23	4
Silver	ND		0.72		mg/Kg		10/18/13 21:56	10/21/13 18:23	4
Selenium	ND		2.9		mg/Kg		10/18/13 21:56	10/21/13 18:23	4

Client Sample Results

Client Sample ID: B-7-1.0
Date Collected: 10/16/13 11:45
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-13
Matrix: Solid

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.35**		0.0092		mg/Kg		10/24/13 22:09	10/25/13 15:59	1

Client Sample Results

Client Sample ID: B-8-1.0

Lab Sample ID: 720-53093-15

Date Collected: 10/16/13 12:20

Matrix: Solid

Date Received: 10/16/13 17:10

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
Dieldrin	**1200**		19		ug/Kg		10/21/13 11:21	10/22/13 08:29	10
Endrin aldehyde	ND		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
Endrin	ND		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
Endrin ketone	ND		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
Heptachlor	ND		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
Heptachlor epoxide	ND		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
4,4'-DDT	**220**		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
4,4'-DDE	**180**		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
4,4'-DDD	**290**		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
Endosulfan I	ND		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
Endosulfan II	ND		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
alpha-BHC	ND		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
beta-BHC	ND		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
gamma-BHC (Lindane)	**17**		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
delta-BHC	ND		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
Endosulfan sulfate	**34**		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
Methoxychlor	ND		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
Toxaphene	ND		39		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
Chlordane (technical)	**60**	**p**	39		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
alpha-Chlordane	**6.7**	**p**	1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1
gamma-Chlordane	**11**		1.9		ug/Kg		10/21/13 11:21	10/22/13 03:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*108*		*57 - 122*	*10/21/13 11:21*	*10/22/13 03:59*	*1*
DCB Decachlorobiphenyl	*108*	*p*	*21 - 136*	*10/21/13 11:21*	*10/22/13 03:59*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorprop	ND		330		ug/Kg		10/21/13 00:26	10/22/13 10:28	10
2,4-D	ND		330		ug/Kg		10/21/13 00:26	10/22/13 10:28	10
Silvex (2,4,5-TP)	ND		330		ug/Kg		10/21/13 00:26	10/22/13 10:28	10
2,4,5-T	ND		330		ug/Kg		10/21/13 00:26	10/22/13 10:28	10
2,4-DB	ND		330		ug/Kg		10/21/13 00:26	10/22/13 10:28	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*59*		*32 - 122*	*10/21/13 00:26*	*10/22/13 10:28*	*10*

Method: 8151A - Herbicides (GC) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dicamba	**3700**		1600		ug/Kg		10/21/13 00:26	10/22/13 19:17	50

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**110**		1.9		mg/Kg		10/18/13 21:56	10/21/13 18:27	4
Cadmium	**0.53**		0.46		mg/Kg		10/18/13 21:56	10/21/13 18:27	4
Nickel	**42**		1.9		mg/Kg		10/18/13 21:56	10/21/13 18:27	4
Chromium	**39**		1.9		mg/Kg		10/18/13 21:56	10/21/13 18:27	4
Arsenic	**8.6**		3.7		mg/Kg		10/18/13 21:56	10/21/13 18:27	4
Barium	**270**		1.9		mg/Kg		10/18/13 21:56	10/21/13 18:27	4

Client Sample ID: B-8-1.0

Lab Sample ID: 720-53093-15

Date Collected: 10/16/13 12:20

Matrix: Solid

Date Received: 10/16/13 17:10

Method: 6010B - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.93		mg/Kg		10/18/13 21:56	10/21/13 18:27	4
Selenium	ND		3.7		mg/Kg		10/18/13 21:56	10/21/13 18:27	4

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.081**		0.0095		mg/Kg		10/24/13 22:09	10/25/13 16:01	1

Client Sample ID: B-9-1.0

Lab Sample ID: 720-53093-17

Date Collected: 10/16/13 07:20
Date Received: 10/16/13 17:10
Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
Dieldrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
Endrin aldehyde	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
Endrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
Endrin ketone	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
Heptachlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
Heptachlor epoxide	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
4,4'-DDT	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
4,4'-DDE	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
4,4'-DDD	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
Endosulfan I	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
Endosulfan II	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
alpha-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
beta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
delta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
Endosulfan sulfate	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
Methoxychlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
Toxaphene	ND		39		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
Chlordane (technical)	ND		39		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
alpha-Chlordane	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1
gamma-Chlordane	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*85*		*57 - 122*	*10/21/13 11:21*	*10/22/13 04:16*	*1*
DCB Decachlorobiphenyl	*89*	*p*	*21 - 136*	*10/21/13 11:21*	*10/22/13 04:16*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dicamba	ND		320		ug/Kg		10/21/13 00:26	10/22/13 10:51	10
Dichlorprop	ND		320		ug/Kg		10/21/13 00:26	10/22/13 10:51	10
2,4-D	ND		320		ug/Kg		10/21/13 00:26	10/22/13 10:51	10
Silvex (2,4,5-TP)	ND		320		ug/Kg		10/21/13 00:26	10/22/13 10:51	10
2,4,5-T	ND		320		ug/Kg		10/21/13 00:26	10/22/13 10:51	10
2,4-DB	ND		320		ug/Kg		10/21/13 00:26	10/22/13 10:51	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*59*		*32 - 122*	*10/21/13 00:26*	*10/22/13 10:51*	*10*

Client Sample Results

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-1

Client Sample ID: B-10-1.0

Date Collected: 10/16/13 07:40
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-19
Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
Dieldrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
Endrin aldehyde	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
Endrin	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
Endrin ketone	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
Heptachlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
Heptachlor epoxide	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
4,4'-DDT	**92**		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
4,4'-DDE	**490**		20		ug/Kg		10/21/13 11:21	10/22/13 09:03	10
4,4'-DDD	**110**	**p**	2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
Endosulfan I	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
Endosulfan II	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
alpha-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
beta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
delta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
Endosulfan sulfate	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
Methoxychlor	ND		2.0		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
Toxaphene	ND		40		ug/Kg		10/21/13 11:21	10/22/13 04:33	1
Chlordane (technical)	**3200**		400		ug/Kg		10/21/13 11:21	10/22/13 09:03	10
alpha-Chlordane	**1100**		20		ug/Kg		10/21/13 11:21	10/22/13 09:03	10
gamma-Chlordane	**800**		20		ug/Kg		10/21/13 11:21	10/22/13 09:03	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*72*		*57 - 122*	*10/21/13 11:21*	*10/22/13 04:33*	*1*
DCB Decachlorobiphenyl	*31*	*p*	*21 - 136*	*10/21/13 11:21*	*10/22/13 04:33*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dicamba	ND		330		ug/Kg		10/21/13 00:26	10/22/13 11:13	10
Dichlorprop	ND		330		ug/Kg		10/21/13 00:26	10/22/13 11:13	10
2,4-D	ND		330		ug/Kg		10/21/13 00:26	10/22/13 11:13	10
Silvex (2,4,5-TP)	ND		330		ug/Kg		10/21/13 00:26	10/22/13 11:13	10
2,4,5-T	ND		330		ug/Kg		10/21/13 00:26	10/22/13 11:13	10
2,4-DB	ND		330		ug/Kg		10/21/13 00:26	10/22/13 11:13	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*81*		*32 - 122*	*10/21/13 00:26*	*10/22/13 11:13*	*10*

Client Sample Results

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-1

Client Sample ID: B-11-1.0

Date Collected: 10/16/13 08:05
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-21
Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
Dieldrin	**6.9**		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
Endrin aldehyde	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
Endrin	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
Endrin ketone	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
Heptachlor	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
Heptachlor epoxide	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
4,4'-DDT	**25**		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
4,4'-DDE	**16**		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
4,4'-DDD	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
Endosulfan I	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
Endosulfan II	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
alpha-BHC	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
beta-BHC	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
delta-BHC	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
Endosulfan sulfate	**3.0**		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
Methoxychlor	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
Toxaphene	ND		40		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
Chlordane (technical)	**110**		40		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
alpha-Chlordane	**20**	**p**	2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1
gamma-Chlordane	**11**	**p**	2.0		ug/Kg		10/21/13 14:16	10/22/13 20:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*101*		*57 - 122*	*10/21/13 14:16*	*10/22/13 20:39*	*1*
DCB Decachlorobiphenyl	*126*		*21 - 136*	*10/21/13 14:16*	*10/22/13 20:39*	*1*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dicamba	ND		320		ug/Kg		10/21/13 00:26	10/22/13 11:36	10
Dichlorprop	ND		320		ug/Kg		10/21/13 00:26	10/22/13 11:36	10
2,4-D	ND		320		ug/Kg		10/21/13 00:26	10/22/13 11:36	10
Silvex (2,4,5-TP)	ND		320		ug/Kg		10/21/13 00:26	10/22/13 11:36	10
2,4,5-T	ND		320		ug/Kg		10/21/13 00:26	10/22/13 11:36	10
2,4-DB	ND		320		ug/Kg		10/21/13 00:26	10/22/13 11:36	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*42*		*32 - 122*	*10/21/13 00:26*	*10/22/13 11:36*	*10*

Client Sample Results

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-1

Client Sample ID: B-12-1.0

Date Collected: 10/16/13 08:20
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-23
Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
Dieldrin	**300**		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
Endrin aldehyde	ND		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
Endrin	ND		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
Endrin ketone	ND		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
Heptachlor	ND		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
Heptachlor epoxide	ND		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
4,4'-DDT	**310**		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
4,4'-DDE	**55**		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
4,4'-DDD	**10**	**p**	9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
Endosulfan I	ND		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
Endosulfan II	ND		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
alpha-BHC	ND		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
beta-BHC	ND		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
gamma-BHC (Lindane)	ND		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
delta-BHC	ND		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
Endosulfan sulfate	ND		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
Methoxychlor	ND		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
Toxaphene	ND		200		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
Chlordane (technical)	ND		200		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
alpha-Chlordane	**16**	**p**	9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5
gamma-Chlordane	**14**		9.8		ug/Kg		10/21/13 14:16	10/23/13 16:56	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*112*		*57 - 122*	*10/21/13 14:16*	*10/23/13 16:56*	*5*
DCB Decachlorobiphenyl	*135*		*21 - 136*	*10/21/13 14:16*	*10/23/13 16:56*	*5*

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dicamba	ND		330		ug/Kg		10/21/13 00:26	10/22/13 11:59	10
Dichlorprop	ND		330		ug/Kg		10/21/13 00:26	10/22/13 11:59	10
2,4-D	ND		330		ug/Kg		10/21/13 00:26	10/22/13 11:59	10
Silvex (2,4,5-TP)	ND		330		ug/Kg		10/21/13 00:26	10/22/13 11:59	10
2,4,5-T	ND		330		ug/Kg		10/21/13 00:26	10/22/13 11:59	10
2,4-DB	ND		330		ug/Kg		10/21/13 00:26	10/22/13 11:59	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*72*		*32 - 122*	*10/21/13 00:26*	*10/22/13 11:59*	*10*

QC Sample Results

Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 720-146662/1-A
Matrix: Solid
Analysis Batch: 146710

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 146662

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
Dieldrin	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
Endrin aldehyde	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
Endrin	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
Endrin ketone	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
Heptachlor	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
Heptachlor epoxide	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
4,4'-DDT	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
4,4'-DDE	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
4,4'-DDD	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
Endosulfan I	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
Endosulfan II	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
alpha-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
beta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
delta-BHC	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
Endosulfan sulfate	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
Methoxychlor	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
Toxaphene	ND		40		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
Chlordane (technical)	ND		40		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
alpha-Chlordane	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1
gamma-Chlordane	ND		2.0		ug/Kg		10/21/13 11:21	10/21/13 23:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*96*		*57 - 122*	*10/21/13 11:21*	*10/21/13 23:30*	*1*
DCB Decachlorobiphenyl	*112*		*21 - 136*	*10/21/13 11:21*	*10/21/13 23:30*	*1*

Lab Sample ID: LCS 720-146662/2-A
Matrix: Solid
Analysis Batch: 146732

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 146662

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	16.6	14.1		ug/Kg		85	65 - 120
Dieldrin	16.6	15.3		ug/Kg		92	72 - 120
Endrin aldehyde	16.6	15.7		ug/Kg		94	68 - 120
Endrin	16.6	15.3		ug/Kg		92	68 - 120
Endrin ketone	16.6	15.7		ug/Kg		94	67 - 120
Heptachlor	16.6	14.3		ug/Kg		86	69 - 120
Heptachlor epoxide	16.6	15.3		ug/Kg		92	68 - 120
4,4'-DDT	16.6	15.7		ug/Kg		94	63 - 127
4,4'-DDE	16.6	15.1		ug/Kg		91	70 - 120
4,4'-DDD	16.6	14.9		ug/Kg		89	69 - 120
Endosulfan I	16.6	15.0		ug/Kg		90	62 - 120
Endosulfan II	16.6	15.1		ug/Kg		91	65 - 120
alpha-BHC	16.6	14.5		ug/Kg		87	62 - 120
beta-BHC	16.6	16.6		ug/Kg		100	74 - 124
gamma-BHC (Lindane)	16.6	15.0		ug/Kg		90	72 - 120
delta-BHC	16.6	13.5		ug/Kg		81	64 - 120

QC Sample Results

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-1

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 720-146662/2-A
Matrix: Solid
Analysis Batch: 146732

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 146662

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Endosulfan sulfate			16.6	15.7		ug/Kg		94	67 - 120		
Methoxychlor			16.6	16.6		ug/Kg		100	71 - 132		
alpha-Chlordane			16.6	15.3		ug/Kg		92	70 - 120		
gamma-Chlordane			16.6	15.1		ug/Kg		91	68 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*98*		*57 - 122*
DCB Decachlorobiphenyl	*115*		*21 - 136*

Lab Sample ID: LCSD 720-146662/3-A
Matrix: Solid
Analysis Batch: 146732

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 146662

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin			16.4	14.8		ug/Kg		90	65 - 120	5	20
Dieldrin			16.4	16.3		ug/Kg		99	72 - 120	6	20
Endrin aldehyde			16.4	16.9		ug/Kg		103	68 - 120	7	20
Endrin			16.4	16.1		ug/Kg		98	68 - 120	5	20
Endrin ketone			16.4	16.7		ug/Kg		101	67 - 120	6	20
Heptachlor			16.4	15.0		ug/Kg		92	69 - 120	5	20
Heptachlor epoxide			16.4	16.3		ug/Kg		99	68 - 120	6	20
4,4'-DDT			16.4	16.8		ug/Kg		102	63 - 127	7	20
4,4'-DDE			16.4	16.2		ug/Kg		99	70 - 120	7	20
4,4'-DDD			16.4	16.0		ug/Kg		97	69 - 120	7	20
Endosulfan I			16.4	15.9		ug/Kg		97	62 - 120	6	20
Endosulfan II			16.4	16.3		ug/Kg		99	65 - 120	8	35
alpha-BHC			16.4	15.3		ug/Kg		93	62 - 120	6	20
beta-BHC			16.4	17.6		ug/Kg		107	74 - 124	6	20
gamma-BHC (Lindane)			16.4	16.0		ug/Kg		97	72 - 120	7	20
delta-BHC			16.4	14.4		ug/Kg		88	64 - 120	7	20
Endosulfan sulfate			16.4	16.7		ug/Kg		102	67 - 120	7	20
Methoxychlor			16.4	17.6		ug/Kg		107	71 - 132	6	20
alpha-Chlordane			16.4	16.2		ug/Kg		98	70 - 120	6	20
gamma-Chlordane			16.4	16.1		ug/Kg		98	68 - 120	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*105*		*57 - 122*
DCB Decachlorobiphenyl	*121*		*21 - 136*

Lab Sample ID: 720-53093-1 MS
Matrix: Solid
Analysis Batch: 146710

Client Sample ID: B-1-1.0
Prep Type: Total/NA
Prep Batch: 146662

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Aldrin	ND		16.4	15.0		ug/Kg		91	53 - 120		
Dieldrin	ND		16.4	19.2		ug/Kg		112	46 - 130		
Endrin aldehyde	ND		16.4	12.8		ug/Kg		78	40 - 120		
Endrin	ND		16.4	14.7		ug/Kg		90	32 - 143		

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 720-53093-1 MS
Matrix: Solid
Analysis Batch: 146710

Client Sample ID: B-1-1.0
Prep Type: Total/NA
Prep Batch: 146662

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin ketone	ND		16.4	14.8		ug/Kg		90	40 - 120
Heptachlor	ND		16.4	14.7		ug/Kg		90	52 - 120
Heptachlor epoxide	ND		16.4	15.7		ug/Kg		88	40 - 120
4,4'-DDT	10		16.4	23.1		ug/Kg		80	17 - 144
4,4'-DDE	14		16.4	29.5		ug/Kg		96	40 - 120
4,4'-DDD	5.8	p	16.4	21.3		ug/Kg		95	40 - 120
Endosulfan I	ND		16.4	14.2		ug/Kg		87	40 - 120
Endosulfan II	ND		16.4	14.2		ug/Kg		87	40 - 120
alpha-BHC	ND		16.4	15.6		ug/Kg		95	40 - 120
beta-BHC	ND		16.4	16.7		ug/Kg		102	40 - 120
gamma-BHC (Lindane)	ND		16.4	15.4		ug/Kg		94	58 - 120
delta-BHC	ND		16.4	13.6		ug/Kg		83	40 - 120
Endosulfan sulfate	ND		16.4	18.2		ug/Kg		111	40 - 120
Methoxychlor	ND		16.4	11.7		ug/Kg		71	40 - 120
alpha-Chlordane	9.2	p	16.4	24.8		ug/Kg		95	40 - 120
gamma-Chlordane	ND		16.4	24.4	F	ug/Kg		142	40 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Tetrachloro-m-xylene	*98*		*57 - 122*
DCB Decachlorobiphenyl	*67*	*p*	*21 - 136*

Lab Sample ID: 720-53093-1 MSD
Matrix: Solid
Analysis Batch: 146710

Client Sample ID: B-1-1.0
Prep Type: Total/NA
Prep Batch: 146662

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	ND		16.5	14.2		ug/Kg		86	53 - 120	0	20
Dieldrin	ND		16.5	13.2		ug/Kg		77	46 - 130	4	20
Endrin aldehyde	ND		16.5	11.8		ug/Kg		72	40 - 120	8	20
Endrin	ND		16.5	13.4		ug/Kg		81	32 - 143	10	20
Endrin ketone	ND		16.5	13.6		ug/Kg		83	40 - 120	2	20
Heptachlor	ND		16.5	13.0		ug/Kg		79	52 - 120	12	20
Heptachlor epoxide	ND		16.5	14.8		ug/Kg		82	40 - 120	6	20
4,4'-DDT	10		16.5	18.4	F	ug/Kg		52	17 - 144	22	20
4,4'-DDE	14		16.5	28.5		ug/Kg		89	40 - 120	3	20
4,4'-DDD	3.8	p	16.5	23.0	F	ug/Kg		116	40 - 120	51	20
Endosulfan I	ND		16.5	13.7		ug/Kg		83	40 - 120	3	20
Endosulfan II	ND		16.5	13.5		ug/Kg		82	40 - 120	5	30
alpha-BHC	ND		16.5	14.2		ug/Kg		87	40 - 120	9	20
beta-BHC	ND		16.5	14.4		ug/Kg		87	40 - 120	15	20
gamma-BHC (Lindane)	ND		16.5	14.0		ug/Kg		85	58 - 120	9	20
delta-BHC	ND		16.5	12.2		ug/Kg		74	40 - 120	3	20
Endosulfan sulfate	ND		16.5	15.7		ug/Kg		96	40 - 120	15	20
Methoxychlor	ND		16.5	8.87	F	ug/Kg		54	40 - 120	27	20
alpha-Chlordane	9.2	p	16.5	21.9		ug/Kg		77	40 - 120	13	20
gamma-Chlordane	14		16.5	25.5	F	ug/Kg		72	40 - 120	36	20

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 720-53093-1 MSD
Matrix: Solid
Analysis Batch: 146710

Client Sample ID: B-1-1.0
Prep Type: Total/NA
Prep Batch: 146662

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*97*		*57 - 122*
DCB Decachlorobiphenyl	*95*		*21 - 136*

Lab Sample ID: MB 720-146684/1-A
Matrix: Solid
Analysis Batch: 146760

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 146684

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
Dieldrin	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
Endrin aldehyde	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
Endrin	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
Endrin ketone	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
Heptachlor	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
Heptachlor epoxide	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
4,4'-DDT	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
4,4'-DDE	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
4,4'-DDD	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
Endosulfan I	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
Endosulfan II	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
alpha-BHC	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
beta-BHC	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
delta-BHC	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
Endosulfan sulfate	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
Methoxychlor	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
Toxaphene	ND		40		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
Chlordane (technical)	ND		40		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
alpha-Chlordane	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1
gamma-Chlordane	ND		2.0		ug/Kg		10/21/13 14:16	10/22/13 19:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*115*		*57 - 122*	*10/21/13 14:16*	*10/22/13 19:09*	*1*
DCB Decachlorobiphenyl	*130*		*21 - 136*	*10/21/13 14:16*	*10/22/13 19:09*	*1*

Lab Sample ID: LCS 720-146684/2-A
Matrix: Solid
Analysis Batch: 146760

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 146684

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	16.6	16.4		ug/Kg		99	65 - 120
Dieldrin	16.6	17.0		ug/Kg		103	72 - 120
Endrin aldehyde	16.6	17.7		ug/Kg		107	68 - 120
Endrin	16.6	17.1		ug/Kg		103	68 - 120
Endrin ketone	16.6	17.7		ug/Kg		107	67 - 120
Heptachlor	16.6	15.6		ug/Kg		94	69 - 120
Heptachlor epoxide	16.6	17.0		ug/Kg		103	68 - 120
4,4'-DDT	16.6	18.3		ug/Kg		110	63 - 127

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 720-146684/2-A
Client Sample ID: Lab Control Sample
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 146760
Prep Batch: 146684

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDE	16.6	17.4		ug/Kg		105	70 - 120
4,4'-DDD	16.6	17.9		ug/Kg		108	69 - 120
Endosulfan I	16.6	16.7		ug/Kg		101	62 - 120
Endosulfan II	16.6	17.4		ug/Kg		105	65 - 120
alpha-BHC	16.6	15.2		ug/Kg		92	62 - 120
beta-BHC	16.6	17.9		ug/Kg		108	74 - 124
gamma-BHC (Lindane)	16.6	15.9		ug/Kg		96	72 - 120
delta-BHC	16.6	14.2		ug/Kg		86	64 - 120
Endosulfan sulfate	16.6	17.6		ug/Kg		106	67 - 120
Methoxychlor	16.6	19.6		ug/Kg		118	71 - 132
alpha-Chlordane	16.6	17.0		ug/Kg		103	70 - 120
gamma-Chlordane	16.6	17.1		ug/Kg		103	68 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*103*		*57 - 122*
DCB Decachlorobiphenyl	*126*		*21 - 136*

Lab Sample ID: LCSD 720-146684/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 146760
Prep Batch: 146684

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	16.6	16.4		ug/Kg		99	65 - 120	0	20
Dieldrin	16.6	16.6		ug/Kg		100	72 - 120	2	20
Endrin aldehyde	16.6	16.6		ug/Kg		100	68 - 120	7	20
Endrin	16.6	16.5		ug/Kg		100	68 - 120	3	20
Endrin ketone	16.6	17.2		ug/Kg		104	67 - 120	3	20
Heptachlor	16.6	15.8		ug/Kg		95	69 - 120	1	20
Heptachlor epoxide	16.6	16.6		ug/Kg		100	68 - 120	3	20
4,4'-DDT	16.6	17.8		ug/Kg		108	63 - 127	3	20
4,4'-DDE	16.6	16.9		ug/Kg		102	70 - 120	3	20
4,4'-DDD	16.6	17.3		ug/Kg		105	69 - 120	3	20
Endosulfan I	16.6	16.3		ug/Kg		98	62 - 120	3	20
Endosulfan II	16.6	16.8		ug/Kg		101	65 - 120	3	35
alpha-BHC	16.6	15.4		ug/Kg		93	62 - 120	1	20
beta-BHC	16.6	17.9		ug/Kg		108	74 - 124	1	20
gamma-BHC (Lindane)	16.6	15.9		ug/Kg		96	72 - 120	0	20
delta-BHC	16.6	14.1		ug/Kg		85	64 - 120	1	20
Endosulfan sulfate	16.6	17.2		ug/Kg		104	67 - 120	2	20
Methoxychlor	16.6	19.2		ug/Kg		116	71 - 132	2	20
alpha-Chlordane	16.6	16.6		ug/Kg		100	70 - 120	3	20
gamma-Chlordane	16.6	16.6		ug/Kg		100	68 - 120	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*105*		*57 - 122*
DCB Decachlorobiphenyl	*120*		*21 - 136*

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 720-53093-21 MS
Matrix: Solid
Analysis Batch: 146760

Client Sample ID: B-11-1.0
Prep Type: Total/NA
Prep Batch: 146684

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	ND		16.5	15.5		ug/Kg		94	53 - 120
Dieldrin	5.4		16.5	22.7		ug/Kg		105	46 - 130
Endrin aldehyde	ND		16.5	16.4		ug/Kg		99	40 - 120
Endrin	ND		16.5	17.4		ug/Kg		106	32 - 143
Endrin ketone	ND		16.5	23.0	F	ug/Kg		139	40 - 120
Heptachlor	ND		16.5	15.0		ug/Kg		91	52 - 120
Heptachlor epoxide	ND		16.5	23.2	F	ug/Kg		141	40 - 120
4,4'-DDT	21		16.5	41.0		ug/Kg		119	17 - 144
4,4'-DDE	15		16.5	33.8		ug/Kg		112	40 - 120
4,4'-DDD	ND		16.5	22.5	F	ug/Kg		136	40 - 120
Endosulfan I	ND		16.5	16.1		ug/Kg		97	40 - 120
Endosulfan II	ND		16.5	18.6		ug/Kg		112	40 - 120
alpha-BHC	ND		16.5	13.2		ug/Kg		80	40 - 120
beta-BHC	ND		16.5	16.8		ug/Kg		102	40 - 120
gamma-BHC (Lindane)	ND		16.5	15.6		ug/Kg		95	58 - 120
delta-BHC	ND		16.5	13.6		ug/Kg		82	40 - 120
Endosulfan sulfate	2.9		16.5	16.8		ug/Kg		84	40 - 120
Methoxychlor	ND		16.5	27.0	F	ug/Kg		164	40 - 120
alpha-Chlordane	41	p	16.5	62.0	F	ug/Kg		129	40 - 120
gamma-Chlordane	11	p	16.5	39.8	F	ug/Kg		175	40 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Tetrachloro-m-xylene	*106*		*57 - 122*
DCB Decachlorobiphenyl	*123*		*21 - 136*

Lab Sample ID: 720-53093-21 MSD
Matrix: Solid
Analysis Batch: 146760

Client Sample ID: B-11-1.0
Prep Type: Total/NA
Prep Batch: 146684

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	ND		16.6	15.9		ug/Kg		95	53 - 120	2	20
Dieldrin	5.4		16.6	23.2		ug/Kg		107	46 - 130	2	20
Endrin aldehyde	ND		16.6	17.5		ug/Kg		105	40 - 120	7	20
Endrin	ND		16.6	18.3		ug/Kg		110	32 - 143	5	20
Endrin ketone	ND		16.6	26.8	F	ug/Kg		161	40 - 120	15	20
Heptachlor	ND		16.6	15.0		ug/Kg		90	52 - 120	0	20
Heptachlor epoxide	ND		16.6	21.4	F	ug/Kg		128	40 - 120	3	20
4,4'-DDT	21		16.6	43.2		ug/Kg		132	17 - 144	5	20
4,4'-DDE	16		16.6	36.7	F	ug/Kg		123	40 - 120	6	20
4,4'-DDD	ND		16.6	25.1	F	ug/Kg		151	40 - 120	11	20
Endosulfan I	ND		16.6	16.7		ug/Kg		101	40 - 120	4	20
Endosulfan II	ND		16.6	20.3	F	ug/Kg		122	40 - 120	9	30
alpha-BHC	ND		16.6	13.9		ug/Kg		84	40 - 120	5	20
beta-BHC	ND		16.6	16.3		ug/Kg		98	40 - 120	3	20
gamma-BHC (Lindane)	ND		16.6	15.4		ug/Kg		92	58 - 120	1	20
delta-BHC	ND		16.6	13.7		ug/Kg		82	40 - 120	1	20
Endosulfan sulfate	2.9		16.6	18.6		ug/Kg		95	40 - 120	11	20
Methoxychlor	ND		16.6	30.9	F	ug/Kg		186	40 - 120	13	20

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 720-53093-21 MSD
Matrix: Solid
Analysis Batch: 146760

Client Sample ID: B-11-1.0
Prep Type: Total/NA
Prep Batch: 146684

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
alpha-Chlordane	41	p	16.6	67.5	F	ug/Kg		162	40 - 120	8	20
gamma-Chlordane	11	p	16.6	44.3	F	ug/Kg		201	40 - 120	11	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*101*		*57 - 122*
DCB Decachlorobiphenyl	*134*		*21 - 136*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 500-207861/1-A
Matrix: Solid
Analysis Batch: 207957

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 207861

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dicamba	ND		330		ug/Kg		10/21/13 00:26	10/22/13 05:35	10
Dichlorprop	ND		330		ug/Kg		10/21/13 00:26	10/22/13 05:35	10
2,4-D	ND		330		ug/Kg		10/21/13 00:26	10/22/13 05:35	10
Silvex (2,4,5-TP)	ND		330		ug/Kg		10/21/13 00:26	10/22/13 05:35	10
2,4,5-T	ND		330		ug/Kg		10/21/13 00:26	10/22/13 05:35	10
2,4-DB	ND		330		ug/Kg		10/21/13 00:26	10/22/13 05:35	10

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*63*		*32 - 122*	*10/21/13 00:26*	*10/22/13 05:35*	*10*

Lab Sample ID: LCS 500-207861/2-A
Matrix: Solid
Analysis Batch: 207957

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 207861

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dicamba	1340	784		ug/Kg		58	44 - 114
Dichlorprop	1340	562		ug/Kg		42	30 - 113
2,4-D	1340	ND		ug/Kg		24	23 - 125
Silvex (2,4,5-TP)	1340	573		ug/Kg		43	36 - 114
2,4,5-T	1340	566		ug/Kg		42	30 - 119
2,4-DB	1350	615		ug/Kg		46	34 - 111

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCAA	*54*		*32 - 122*

Lab Sample ID: 720-53093-1 MS
Matrix: Solid
Analysis Batch: 207957

Client Sample ID: B-1-1.0
Prep Type: Total/NA
Prep Batch: 207861

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dicamba	ND		1320	766		ug/Kg		58	44 - 114
Dichlorprop	ND		1320	528		ug/Kg		40	30 - 113
2,4-D	ND		1310	ND	F	ug/Kg		20	23 - 125

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: 720-53093-1 MS
Matrix: Solid
Analysis Batch: 207957

Client Sample ID: B-1-1.0
Prep Type: Total/NA
Prep Batch: 207861

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Silvex (2,4,5-TP)	ND		1320	579		ug/Kg		44	36 - 114
2,4,5-T	ND		1320	547		ug/Kg		41	30 - 119
2,4-DB	ND		1330	489		ug/Kg		37	34 - 111

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCAA	*49*		*32 - 122*

Lab Sample ID: 720-53093-1 MSD
Matrix: Solid
Analysis Batch: 207957

Client Sample ID: B-1-1.0
Prep Type: Total/NA
Prep Batch: 207861

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dicamba	ND		1310	675		ug/Kg		52	44 - 114	13	30
Dichlorprop	ND		1310	512		ug/Kg		39	30 - 113	3	30
2,4-D	ND		1300	325		ug/Kg		25	23 - 125	20	30
Silvex (2,4,5-TP)	ND		1310	516		ug/Kg		39	36 - 114	11	30
2,4,5-T	ND		1310	528		ug/Kg		40	30 - 119	3	30
2,4-DB	ND		1310	543		ug/Kg		41	34 - 111	10	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCAA	*48*		*32 - 122*

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 720-146608/1-A
Matrix: Solid
Analysis Batch: 146715

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 146608

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.50		mg/Kg		10/18/13 21:56	10/21/13 17:10	1
Cadmium	ND		0.13		mg/Kg		10/18/13 21:56	10/21/13 17:10	1
Nickel	ND		0.50		mg/Kg		10/18/13 21:56	10/21/13 17:10	1
Chromium	ND		0.50		mg/Kg		10/18/13 21:56	10/21/13 17:10	1
Arsenic	ND		1.0		mg/Kg		10/18/13 21:56	10/21/13 17:10	1
Barium	ND		0.50		mg/Kg		10/18/13 21:56	10/21/13 17:10	1
Silver	ND		0.25		mg/Kg		10/18/13 21:56	10/21/13 17:10	1
Selenium	ND		1.0		mg/Kg		10/18/13 21:56	10/21/13 17:10	1

Lab Sample ID: LCS 720-146608/2-A
Matrix: Solid
Analysis Batch: 146715

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 146608

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	50.3		mg/Kg		101	80 - 120
Cadmium	50.0	50.9		mg/Kg		102	80 - 120
Nickel	50.0	50.1		mg/Kg		100	80 - 120
Chromium	50.0	48.8		mg/Kg		98	80 - 120
Arsenic	50.0	47.6		mg/Kg		95	80 - 120

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 720-146608/2-A **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 146715 **Prep Batch: 146608**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	50.0	50.7		mg/Kg		101	80 - 120
Silver	25.0	25.9		mg/Kg		104	80 - 120
Selenium	50.0	47.4		mg/Kg		95	80 - 120

Lab Sample ID: LCSD 720-146608/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 146715 **Prep Batch: 146608**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	50.0	50.2		mg/Kg		100	80 - 120	0	20
Cadmium	50.0	50.8		mg/Kg		102	80 - 120	0	20
Nickel	50.0	50.2		mg/Kg		100	80 - 120	0	20
Chromium	50.0	49.9		mg/Kg		100	80 - 120	2	20
Arsenic	50.0	47.7		mg/Kg		95	80 - 120	0	20
Barium	50.0	50.9		mg/Kg		102	80 - 120	0	20
Silver	25.0	26.3		mg/Kg		105	80 - 120	1	20
Selenium	50.0	47.2		mg/Kg		94	80 - 120	0	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 720-146999/1-A **Client Sample ID: Method Blank**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 147062 **Prep Batch: 146999**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.010		mg/Kg		10/24/13 22:09	10/25/13 15:26	1

Lab Sample ID: LCS 720-146999/2-A **Client Sample ID: Lab Control Sample**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 147062 **Prep Batch: 146999**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.833	0.828		mg/Kg		99	80 - 120

Lab Sample ID: LCSD 720-146999/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 147062 **Prep Batch: 146999**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.833	0.818		mg/Kg		98	80 - 120	1	20

Lab Sample ID: 720-53093-1 MS **Client Sample ID: B-1-1.0**
Matrix: Solid **Prep Type: Total/NA**
Analysis Batch: 147062 **Prep Batch: 146999**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.065		0.735	0.824		mg/Kg		103	75 - 125

Method: 7471A - Mercury (CVAA) (Continued)

Lab Sample ID: 720-53093-1 MSD
Client Sample ID: B-1-1.0
Matrix: Solid
Prep Type: Total/NA
Analysis Batch: 147062
Prep Batch: 146999

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.065		0.746	0.851		mg/Kg		105	75 - 125	3	20

GC Semi VOA

Prep Batch: 146662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-1	B-1-1.0	Total/NA	Solid	3546	
720-53093-1 MS	B-1-1.0	Total/NA	Solid	3546	
720-53093-1 MSD	B-1-1.0	Total/NA	Solid	3546	
720-53093-3	B-2-1.0	Total/NA	Solid	3546	
720-53093-5	B-3-1.0	Total/NA	Solid	3546	
720-53093-7	B-4-1.0	Total/NA	Solid	3546	
720-53093-9	B-5-1.0	Total/NA	Solid	3546	
720-53093-11	B-6-1.0	Total/NA	Solid	3546	
720-53093-13	B-7-1.0	Total/NA	Solid	3546	
720-53093-15	B-8-1.0	Total/NA	Solid	3546	
720-53093-17	B-9-1.0	Total/NA	Solid	3546	
720-53093-19	B-10-1.0	Total/NA	Solid	3546	
LCS 720-146662/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 720-146662/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	
MB 720-146662/1-A	Method Blank	Total/NA	Solid	3546	

Prep Batch: 146684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-21	B-11-1.0	Total/NA	Solid	3546	
720-53093-21 MS	B-11-1.0	Total/NA	Solid	3546	
720-53093-21 MSD	B-11-1.0	Total/NA	Solid	3546	
720-53093-23	B-12-1.0	Total/NA	Solid	3546	
LCS 720-146684/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 720-146684/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	
MB 720-146684/1-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 146710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-1	B-1-1.0	Total/NA	Solid	8081A	146662
720-53093-1 MS	B-1-1.0	Total/NA	Solid	8081A	146662
720-53093-1 MSD	B-1-1.0	Total/NA	Solid	8081A	146662
720-53093-3	B-2-1.0	Total/NA	Solid	8081A	146662
720-53093-5	B-3-1.0	Total/NA	Solid	8081A	146662
720-53093-7	B-4-1.0	Total/NA	Solid	8081A	146662
720-53093-9	B-5-1.0	Total/NA	Solid	8081A	146662
720-53093-11	B-6-1.0	Total/NA	Solid	8081A	146662
720-53093-13	B-7-1.0	Total/NA	Solid	8081A	146662
720-53093-13	B-7-1.0	Total/NA	Solid	8081A	146662
720-53093-15	B-8-1.0	Total/NA	Solid	8081A	146662
720-53093-15	B-8-1.0	Total/NA	Solid	8081A	146662
720-53093-17	B-9-1.0	Total/NA	Solid	8081A	146662
720-53093-19	B-10-1.0	Total/NA	Solid	8081A	146662
720-53093-19	B-10-1.0	Total/NA	Solid	8081A	146662
MB 720-146662/1-A	Method Blank	Total/NA	Solid	8081A	146662

Analysis Batch: 146732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 720-146662/2-A	Lab Control Sample	Total/NA	Solid	8081A	146662
LCSD 720-146662/3-A	Lab Control Sample Dup	Total/NA	Solid	8081A	146662

GC Semi VOA (Continued)

Analysis Batch: 146760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-21	B-11-1.0	Total/NA	Solid	8081A	146684
720-53093-21 MS	B-11-1.0	Total/NA	Solid	8081A	146684
720-53093-21 MSD	B-11-1.0	Total/NA	Solid	8081A	146684
LCS 720-146684/2-A	Lab Control Sample	Total/NA	Solid	8081A	146684
LCSD 720-146684/3-A	Lab Control Sample Dup	Total/NA	Solid	8081A	146684
MB 720-146684/1-A	Method Blank	Total/NA	Solid	8081A	146684

Analysis Batch: 146856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-23	B-12-1.0	Total/NA	Solid	8081A	146684

Prep Batch: 207861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-1	B-1-1.0	Total/NA	Solid	8151A	
720-53093-1 MS	B-1-1.0	Total/NA	Solid	8151A	
720-53093-1 MSD	B-1-1.0	Total/NA	Solid	8151A	
720-53093-3	B-2-1.0	Total/NA	Solid	8151A	
720-53093-5	B-3-1.0	Total/NA	Solid	8151A	
720-53093-7	B-4-1.0	Total/NA	Solid	8151A	
720-53093-9	B-5-1.0	Total/NA	Solid	8151A	
720-53093-11	B-6-1.0	Total/NA	Solid	8151A	
720-53093-13	B-7-1.0	Total/NA	Solid	8151A	
720-53093-15	B-8-1.0	Total/NA	Solid	8151A	
720-53093-15 - DL	B-8-1.0	Total/NA	Solid	8151A	
720-53093-17	B-9-1.0	Total/NA	Solid	8151A	
720-53093-19	B-10-1.0	Total/NA	Solid	8151A	
720-53093-21	B-11-1.0	Total/NA	Solid	8151A	
720-53093-23	B-12-1.0	Total/NA	Solid	8151A	
LCS 500-207861/2-A	Lab Control Sample	Total/NA	Solid	8151A	
MB 500-207861/1-A	Method Blank	Total/NA	Solid	8151A	

Analysis Batch: 207957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-1	B-1-1.0	Total/NA	Solid	8151A	207861
720-53093-1 MS	B-1-1.0	Total/NA	Solid	8151A	207861
720-53093-1 MSD	B-1-1.0	Total/NA	Solid	8151A	207861
720-53093-3	B-2-1.0	Total/NA	Solid	8151A	207861
720-53093-5	B-3-1.0	Total/NA	Solid	8151A	207861
720-53093-7	B-4-1.0	Total/NA	Solid	8151A	207861
720-53093-9	B-5-1.0	Total/NA	Solid	8151A	207861
720-53093-11	B-6-1.0	Total/NA	Solid	8151A	207861
720-53093-13	B-7-1.0	Total/NA	Solid	8151A	207861
720-53093-15	B-8-1.0	Total/NA	Solid	8151A	207861
720-53093-15 - DL	B-8-1.0	Total/NA	Solid	8151A	207861
720-53093-17	B-9-1.0	Total/NA	Solid	8151A	207861
720-53093-19	B-10-1.0	Total/NA	Solid	8151A	207861
720-53093-21	B-11-1.0	Total/NA	Solid	8151A	207861
720-53093-23	B-12-1.0	Total/NA	Solid	8151A	207861
LCS 500-207861/2-A	Lab Control Sample	Total/NA	Solid	8151A	207861
MB 500-207861/1-A	Method Blank	Total/NA	Solid	8151A	207861

QC Association Summary

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-1

Metals

Prep Batch: 146608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-1	B-1-1.0	Total/NA	Solid	3050B	
720-53093-3	B-2-1.0	Total/NA	Solid	3050B	
720-53093-5	B-3-1.0	Total/NA	Solid	3050B	
720-53093-7	B-4-1.0	Total/NA	Solid	3050B	
720-53093-9	B-5-1.0	Total/NA	Solid	3050B	
720-53093-11	B-6-1.0	Total/NA	Solid	3050B	
720-53093-13	B-7-1.0	Total/NA	Solid	3050B	
720-53093-15	B-8-1.0	Total/NA	Solid	3050B	
LCS 720-146608/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 720-146608/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
MB 720-146608/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 146715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-1	B-1-1.0	Total/NA	Solid	6010B	146608
720-53093-3	B-2-1.0	Total/NA	Solid	6010B	146608
720-53093-5	B-3-1.0	Total/NA	Solid	6010B	146608
720-53093-7	B-4-1.0	Total/NA	Solid	6010B	146608
720-53093-9	B-5-1.0	Total/NA	Solid	6010B	146608
720-53093-11	B-6-1.0	Total/NA	Solid	6010B	146608
720-53093-13	B-7-1.0	Total/NA	Solid	6010B	146608
720-53093-15	B-8-1.0	Total/NA	Solid	6010B	146608
LCS 720-146608/2-A	Lab Control Sample	Total/NA	Solid	6010B	146608
LCSD 720-146608/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	146608
MB 720-146608/1-A	Method Blank	Total/NA	Solid	6010B	146608

Prep Batch: 146999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-1	B-1-1.0	Total/NA	Solid	7471A	
720-53093-1 MS	B-1-1.0	Total/NA	Solid	7471A	
720-53093-1 MSD	B-1-1.0	Total/NA	Solid	7471A	
720-53093-3	B-2-1.0	Total/NA	Solid	7471A	
720-53093-5	B-3-1.0	Total/NA	Solid	7471A	
720-53093-7	B-4-1.0	Total/NA	Solid	7471A	
720-53093-9	B-5-1.0	Total/NA	Solid	7471A	
720-53093-11	B-6-1.0	Total/NA	Solid	7471A	
720-53093-13	B-7-1.0	Total/NA	Solid	7471A	
720-53093-15	B-8-1.0	Total/NA	Solid	7471A	
LCS 720-146999/2-A	Lab Control Sample	Total/NA	Solid	7471A	
LCSD 720-146999/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	
MB 720-146999/1-A	Method Blank	Total/NA	Solid	7471A	

Analysis Batch: 147062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-1	B-1-1.0	Total/NA	Solid	7471A	146999
720-53093-1 MS	B-1-1.0	Total/NA	Solid	7471A	146999
720-53093-1 MSD	B-1-1.0	Total/NA	Solid	7471A	146999
720-53093-3	B-2-1.0	Total/NA	Solid	7471A	146999
720-53093-5	B-3-1.0	Total/NA	Solid	7471A	146999
720-53093-7	B-4-1.0	Total/NA	Solid	7471A	146999
720-53093-9	B-5-1.0	Total/NA	Solid	7471A	146999

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Metals (Continued)

Analysis Batch: 147062 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-11	B-6-1.0	Total/NA	Solid	7471A	146999
720-53093-13	B-7-1.0	Total/NA	Solid	7471A	146999
720-53093-15	B-8-1.0	Total/NA	Solid	7471A	146999
LCS 720-146999/2-A	Lab Control Sample	Total/NA	Solid	7471A	146999
LCSD 720-146999/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	146999
MB 720-146999/1-A	Method Blank	Total/NA	Solid	7471A	146999

Lab Chronicle

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-1

Client Sample ID: B-1-1.0

Lab Sample ID: 720-53093-1
Date Collected: 10/16/13 09:35
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			207861	10/21/13 00:26	JP1	TAL CHI
Total/NA	Analysis	8151A		10	207957	10/22/13 06:20	SAW	TAL CHI
Total/NA	Prep	3546			146662	10/21/13 11:21	BB	TAL PLS
Total/NA	Analysis	8081A		1	146710	10/22/13 02:02	JZT	TAL PLS
Total/NA	Prep	3050B			146608	10/18/13 21:56	ASB	TAL PLS
Total/NA	Analysis	6010B		4	146715	10/21/13 17:49	SLK	TAL PLS
Total/NA	Prep	7471A			146999	10/24/13 22:09	ASB	TAL PLS
Total/NA	Analysis	7471A		1	147062	10/25/13 15:38	EFH	TAL PLS

Client Sample ID: B-2-1.0

Lab Sample ID: 720-53093-3
Date Collected: 10/16/13 09:50
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			207861	10/21/13 00:26	JP1	TAL CHI
Total/NA	Analysis	8151A		10	207957	10/22/13 07:28	SAW	TAL CHI
Total/NA	Prep	3546			146662	10/21/13 11:21	BB	TAL PLS
Total/NA	Analysis	8081A		1	146710	10/22/13 02:18	JZT	TAL PLS
Total/NA	Prep	3050B			146608	10/18/13 21:56	ASB	TAL PLS
Total/NA	Analysis	6010B		4	146715	10/21/13 18:01	SLK	TAL PLS
Total/NA	Prep	7471A			146999	10/24/13 22:09	ASB	TAL PLS
Total/NA	Analysis	7471A		1	147062	10/25/13 15:43	EFH	TAL PLS

Client Sample ID: B-3-1.0

Lab Sample ID: 720-53093-5
Date Collected: 10/16/13 10:05
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			207861	10/21/13 00:26	JP1	TAL CHI
Total/NA	Analysis	8151A		10	207957	10/22/13 07:50	SAW	TAL CHI
Total/NA	Prep	3546			146662	10/21/13 11:21	BB	TAL PLS
Total/NA	Analysis	8081A		1	146710	10/22/13 02:35	JZT	TAL PLS
Total/NA	Prep	3050B			146608	10/18/13 21:56	ASB	TAL PLS
Total/NA	Analysis	6010B		4	146715	10/21/13 18:06	SLK	TAL PLS
Total/NA	Prep	7471A			146999	10/24/13 22:09	ASB	TAL PLS
Total/NA	Analysis	7471A		1	147062	10/25/13 15:45	EFH	TAL PLS

Client Sample ID: B-4-1.0

Lab Sample ID: 720-53093-7
Date Collected: 10/16/13 10:25
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			207861	10/21/13 00:26	JP1	TAL CHI

Client Sample ID: B-4-1.0
Date Collected: 10/16/13 10:25
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8151A		10	207957	10/22/13 08:12	SAW	TAL CHI
Total/NA	Prep	3546			146662	10/21/13 11:21	BB	TAL PLS
Total/NA	Analysis	8081A		1	146710	10/22/13 02:52	JZT	TAL PLS
Total/NA	Prep	3050B			146608	10/18/13 21:56	ASB	TAL PLS
Total/NA	Analysis	6010B		4	146715	10/21/13 18:10	SLK	TAL PLS
Total/NA	Prep	7471A			146999	10/24/13 22:09	ASB	TAL PLS
Total/NA	Analysis	7471A		1	147062	10/25/13 15:47	EFH	TAL PLS

Client Sample ID: B-5-1.0
Date Collected: 10/16/13 10:45
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			207861	10/21/13 00:26	JP1	TAL CHI
Total/NA	Analysis	8151A		10	207957	10/22/13 08:35	SAW	TAL CHI
Total/NA	Prep	3546			146662	10/21/13 11:21	BB	TAL PLS
Total/NA	Analysis	8081A		1	146710	10/22/13 03:09	JZT	TAL PLS
Total/NA	Prep	3050B			146608	10/18/13 21:56	ASB	TAL PLS
Total/NA	Analysis	6010B		4	146715	10/21/13 18:14	SLK	TAL PLS
Total/NA	Prep	7471A			146999	10/24/13 22:09	ASB	TAL PLS
Total/NA	Analysis	7471A		1	147062	10/25/13 15:54	EFH	TAL PLS

Client Sample ID: B-6-1.0
Date Collected: 10/16/13 11:25
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			207861	10/21/13 00:26	JP1	TAL CHI
Total/NA	Analysis	8151A		10	207957	10/22/13 08:58	SAW	TAL CHI
Total/NA	Prep	3546			146662	10/21/13 11:21	BB	TAL PLS
Total/NA	Analysis	8081A		1	146710	10/22/13 03:26	JZT	TAL PLS
Total/NA	Prep	3050B			146608	10/18/13 21:56	ASB	TAL PLS
Total/NA	Analysis	6010B		4	146715	10/21/13 18:18	SLK	TAL PLS
Total/NA	Prep	7471A			146999	10/24/13 22:09	ASB	TAL PLS
Total/NA	Analysis	7471A		1	147062	10/25/13 15:57	EFH	TAL PLS

Client Sample ID: B-7-1.0
Date Collected: 10/16/13 11:45
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			207861	10/21/13 00:26	JP1	TAL CHI
Total/NA	Analysis	8151A		10	207957	10/22/13 10:05	SAW	TAL CHI

Client Sample ID: B-7-1.0

Lab Sample ID: 720-53093-13
Date Collected: 10/16/13 11:45
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			146662	10/21/13 11:21	BB	TAL PLS
Total/NA	Analysis	8081A		1	146710	10/22/13 03:43	JZT	TAL PLS
Total/NA	Analysis	8081A		10	146710	10/22/13 08:12	JZT	TAL PLS
Total/NA	Prep	3050B			146608	10/18/13 21:56	ASB	TAL PLS
Total/NA	Analysis	6010B		4	146715	10/21/13 18:23	SLK	TAL PLS
Total/NA	Prep	7471A			146999	10/24/13 22:09	ASB	TAL PLS
Total/NA	Analysis	7471A		1	147062	10/25/13 15:59	EFH	TAL PLS

Client Sample ID: B-8-1.0

Lab Sample ID: 720-53093-15
Date Collected: 10/16/13 12:20
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			207861	10/21/13 00:26	JP1	TAL CHI
Total/NA	Analysis	8151A		10	207957	10/22/13 10:28	SAW	TAL CHI
Total/NA	Prep	8151A	DL		207861	10/21/13 00:26	JP1	TAL CHI
Total/NA	Analysis	8151A	DL	50	207957	10/22/13 19:17	SAW	TAL CHI
Total/NA	Analysis	8081A		1	146710	10/22/13 03:59	JZT	TAL PLS
Total/NA	Prep	3546			146662	10/21/13 11:21	BB	TAL PLS
Total/NA	Analysis	8081A		10	146710	10/22/13 08:29	JZT	TAL PLS
Total/NA	Prep	3050B			146608	10/18/13 21:56	ASB	TAL PLS
Total/NA	Analysis	6010B		4	146715	10/21/13 18:27	SLK	TAL PLS
Total/NA	Prep	7471A			146999	10/24/13 22:09	ASB	TAL PLS
Total/NA	Analysis	7471A		1	147062	10/25/13 16:01	EFH	TAL PLS

Client Sample ID: B-9-1.0

Lab Sample ID: 720-53093-17
Date Collected: 10/16/13 07:20
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			207861	10/21/13 00:26	JP1	TAL CHI
Total/NA	Analysis	8151A		10	207957	10/22/13 10:51	SAW	TAL CHI
Total/NA	Analysis	8081A		1	146710	10/22/13 04:16	JZT	TAL PLS
Total/NA	Prep	3546			146662	10/21/13 11:21	BB	TAL PLS

Client Sample ID: B-10-1.0

Lab Sample ID: 720-53093-19
Date Collected: 10/16/13 07:40
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			207861	10/21/13 00:26	JP1	TAL CHI
Total/NA	Analysis	8151A		10	207957	10/22/13 11:13	SAW	TAL CHI

Lab Chronicle

Client Sample ID: B-10-1.0

Lab Sample ID: 720-53093-19

Date Collected: 10/16/13 07:40
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			146662	10/21/13 11:21	BB	TAL PLS
Total/NA	Analysis	8081A		1	146710	10/22/13 04:33	JZT	TAL PLS
Total/NA	Analysis	8081A		10	146710	10/22/13 09:03	JZT	TAL PLS

Client Sample ID: B-11-1.0

Lab Sample ID: 720-53093-21

Date Collected: 10/16/13 08:05
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			207861	10/21/13 00:26	JP1	TAL CHI
Total/NA	Analysis	8151A		10	207957	10/22/13 11:36	SAW	TAL CHI
Total/NA	Analysis	8081A		1	146760	10/22/13 20:39	MQL	TAL PLS
Total/NA	Prep	3546			146684	10/21/13 14:16	MRP	TAL PLS

Client Sample ID: B-12-1.0

Lab Sample ID: 720-53093-23

Date Collected: 10/16/13 08:20
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8151A			207861	10/21/13 00:26	JP1	TAL CHI
Total/NA	Analysis	8151A		10	207957	10/22/13 11:59	SAW	TAL CHI
Total/NA	Prep	3546			146684	10/21/13 14:16	MRP	TAL PLS
Total/NA	Analysis	8081A		5	146856	10/23/13 16:56	JZT	TAL PLS

Laboratory References:

EMLab-OC = EMLab P&K Costa Mesa, 3585 Cadillac Ave, Suite A, Costa Mesa, CA 92626

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Certification Summary

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-1

Laboratory: TestAmerica Pleasanton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-14

Laboratory: TestAmerica Chicago

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40461	04-30-14
California	NELAP	9	01132CA	04-30-14
Georgia	State Program	4	N/A	04-30-14
Hawaii	State Program	9	N/A	04-30-14
Illinois	NELAP	5	100201	04-30-14
Indiana	State Program	5	C-IL-02	04-30-14
Iowa	State Program	7	82	05-01-14
Kansas	NELAP	7	E-10161	10-31-13
Kentucky	State Program	4	90023	12-31-13
Kentucky (UST)	State Program	4	66	04-30-14
Louisiana	NELAP	6	30720	06-30-14
Massachusetts	State Program	1	M-IL035	06-30-14
Mississippi	State Program	4	N/A	04-30-14
North Carolina DENR	State Program	4	291	12-31-13
North Dakota	State Program	8	R-194	04-30-14
Oklahoma	State Program	6	8908	08-31-14
South Carolina	State Program	4	77001	04-30-14
Texas	NELAP	6	T104704252-09-TX	02-28-14
USDA	Federal		P330-12-00038	02-06-15
Wisconsin	State Program	5	999580010	08-31-14
Wyoming	State Program	8	8TMS-Q	04-30-14

Method Summary

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-1

Method	Method Description	Protocol	Laboratory
8081A	Organochlorine Pesticides (GC)	SW846	TAL PLS
8151A	Herbicides (GC)	SW846	TAL CHI
6010B	Metals (ICP)	SW846	TAL PLS
7471A	Mercury (CVAA)	SW846	TAL PLS
Asbestos PLM	General Sub Contract Method	NONE	EMLab-OC

Protocol References:

NONE = NONE
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EMLab-OC = EMLab P&K Costa Mesa, 3585 Cadillac Ave, Suite A, Costa Mesa, CA 92626
TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200
TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Sample Summary

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-53093-1	B-1-1.0	Solid	10/16/13 09:35	10/16/13 17:10
720-53093-3	B-2-1.0	Solid	10/16/13 09:50	10/16/13 17:10
720-53093-5	B-3-1.0	Solid	10/16/13 10:05	10/16/13 17:10
720-53093-7	B-4-1.0	Solid	10/16/13 10:25	10/16/13 17:10
720-53093-9	B-5-1.0	Solid	10/16/13 10:45	10/16/13 17:10
720-53093-11	B-6-1.0	Solid	10/16/13 11:25	10/16/13 17:10
720-53093-13	B-7-1.0	Solid	10/16/13 11:45	10/16/13 17:10
720-53093-15	B-8-1.0	Solid	10/16/13 12:20	10/16/13 17:10
720-53093-17	B-9-1.0	Solid	10/16/13 07:20	10/16/13 17:10
720-53093-19	B-10-1.0	Solid	10/16/13 07:40	10/16/13 17:10
720-53093-21	B-11-1.0	Solid	10/16/13 08:05	10/16/13 17:10
720-53093-23	B-12-1.0	Solid	10/16/13 08:20	10/16/13 17:10

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

EMLab P&K
A TestAmerica Company

Report for:

Ms. Dimple Sharma
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566

Regarding: Project: 720-53093-1
EML ID: 1128936

Approved by:

Miguel Constantino Ines

Approved Signatory
Miguel Ines

Dates of Analysis:
Asbestos-EPA Method 600/R-93/116: 10-21-2013

Service SOPs: Asbestos-EPA Method 600/R-93/116 (EPA-600/M4-82-020 (SOP 01267))

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the items tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

EMLab P&K
17461 Derian Ave, Suite 100, Irvine, CA 92614
(800) 651-4802 Fax (623) 780-7695 www.emlab.com

Client: TestAmerica Pleasanton
C/O: Ms. Dimple Sharma
Re: 720-53093-1

Date of Sampling: 10-16-2013
Date of Receipt: 10-18-2013
Date of Report: 10-21-2013

ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116

Total Samples Submitted:	8
Total Samples Analysed:	8
Total Samples with Layer Asbestos Content > 1%:	0

Location: B-1-1.0 (720-53093-1)

Lab ID-Version‡: 5098812-1

Sample Layers	Asbestos Content
Brown Soil	ND
Composite Non-Asbestos Content:	< 1% Cellulose
Sample Composite Homogeneity:	Good

Location: B-2-1.0 (720-53093-3)

Lab ID-Version‡: 5098813-1

Sample Layers	Asbestos Content
Brown Soil	ND
Composite Non-Asbestos Content:	< 1% Cellulose
Sample Composite Homogeneity:	Good

Location: B-3-1.0 (720-53093-5)

Lab ID-Version‡: 5098814-1

Sample Layers	Asbestos Content
Brown Soil	ND
Composite Non-Asbestos Content:	< 1% Cellulose
Sample Composite Homogeneity:	Good

Location: B-4-1.0 (720-53093-7)

Lab ID-Version‡: 5098815-1

Sample Layers	Asbestos Content
Brown Soil	ND
Composite Non-Asbestos Content:	< 1% Cellulose
Sample Composite Homogeneity:	Good

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

EMLab P&K
17461 Derian Ave, Suite 100, Irvine, CA 92614
(800) 651-4802 Fax (623) 780-7695 www.emlab.com

Client: TestAmerica Pleasanton
C/O: Ms. Dimple Sharma
Re: 720-53093-1

Date of Sampling: 10-16-2013
Date of Receipt: 10-18-2013
Date of Report: 10-21-2013

ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116

Location: B-5-1.0 (720-53093-9)
Lab ID-Version‡: 5098816-1

Sample Layers	Asbestos Content
Brown Soil	ND
Composite Non-Asbestos Content:	< 1% Cellulose
Sample Composite Homogeneity:	Good

Location: B-6-1.0 (720-53093-11)
Lab ID-Version‡: 5098817-1

Sample Layers	Asbestos Content
Brown Soil	ND
Composite Non-Asbestos Content:	< 1% Cellulose
Sample Composite Homogeneity:	Good

Location: B-7-1.0 (720-53093-13)
Lab ID-Version‡: 5098818-1

Sample Layers	Asbestos Content
Brown Soil	ND
Composite Non-Asbestos Content:	< 1% Cellulose
Sample Composite Homogeneity:	Good

Location: B-8-1.0 (720-53093-15)
Lab ID-Version‡: 5098819-1

Sample Layers	Asbestos Content
Brown Soil	ND
Composite Non-Asbestos Content:	< 1% Cellulose
Sample Composite Homogeneity:	Good

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

TestAmerica Pleasanton
1220 Quarry Lane

Pleasanton, CA 94566
phone 925.484.1919 fax 925.600.3002

Chain of Custody Record

720-53093

149395

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other:

Client Contact	**Project Manager: Jeff Austin**	**Site Contact: Charles Rome**	**Date: 10/16/13**
Vista Environemtnal Consulting, Inc	**Tel/Fax: 415-218-0027**	**Lab Contact: Dimple Sharma**	**Carrier:**
2984 Teagarden Street	**Analysis Turnaround Time**		
San Leandr, CA 94577	☐ CALENDAR DAYS ☐ WORKING DAYS		
510-658-8860 Phone	TAT if different from Below: Standard		
888-296-0271 FAX	☐ 2 weeks		
Project Name: Boston/Hampton Road Sites	☐ 1 week		
Site: Hayward, CA	☐ 2 days		
P O #	☐ 1 day		

COC No: 1 of 2 COCs
Sampler:
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Asbestos (PLM)	Lead (6010)	Herbicides (8151)	Organochlorine Pesticaides (8081	HOLD	Sample Specific Notes:
B-1-1.0	10/16/2013	0935	G	S	2	N	N	X	X	X	X		
B-1-2.0	10/16/2013	0940	G	S	2	N	N					X	
B-2-1.0	10/16/2013	0950	G	S	2	N	N	X	X	X	X		
B-2-2.0	10/16/2013	0955	G	S	2	N	N					X	
B-3-1.0	10/16/2013	1005	G	S	2	N	N	X	X	X	X		
B-3-2.0	10/16/2013	1010	G	S	2	N	N					X	
B-4-1.0	10/16/2013	1025	G	S	2	N	N	X	X	X	X		
B-4-2.0	10/16/2013	1030	G	S	2	N	N					X	
B-5-1.0	10/16/2013	1045	G	S	2	N	N	X	X	X	X		
B-5-2.0	10/16/2013	1050	G	S	2	N	N					X	
B-6-1.0	10/16/2013	1125	G	S	2	N	N	X	X	X	X		
B-6-2.0	10/16/2013	1136	G	S	2	N	N					X	

720-53093 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ______

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for ______ Months

Special Instructions/QC Requirements & Comments:

2.6°c , 4.7°c

Custody Seals Intact: ☐ Yes ☐ No
Custody Seal No.:
Cooler Temp. (°C): Obs'd: ______ Corr'd: ______ Therm ID No.: ______

Relinquished by:	Company: Vista Environmental	Date/Time: 10/16/13 1555	Received by:	Company: TA	Date/Time: 10/16/13 1656
Relinquished by:	Company: TA	Date/Time: 10/16/13 1710	Received by:	Company: TA	Date/Time: 10/16/13 1710
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

TestAmerica Pleasanton
1220 Quarry Lane

Pleasanton, CA 94566
phone 925.484.1919 fax 925.600.3002

Chain of Custody Record

720-53093

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other:

149395

TestAmerica Laboratories, Inc.

Client Contact	**Project Manager: Jeff Austin**	**Site Contact: Charles Rome**	**Date: 10/16/13**	**COC No:**
Vista Environemtnal Consulting, Inc	**Tel/Fax: 415-218-0027**	**Lab Contact: Dimple Sharma**	**Carrier:**	2 of 2 COCs
2984 Teagarden Street	**Analysis Turnaround Time**			Sampler:
San Leandr, CA 94577	☐ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
510-658-8860 Phone	TAT if different from Below: Standard			Walk-in Client:
888-296-0271 FAX	☐ 2 weeks			Lab Sampling:
Project Name: Boston/Hampton Road Sites	☐ 1 week			
Site: Hayward, CA	☐ 2 days			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Asbestos (PLM)	Lead (6010)	Herbicides (8151)	Organochlorine Pesticaides (8081	HOLD	Sample Specific Notes:
B-7-1.0	10/16/2013	1145	G	S	2	N	N	X	X	X	X		
B-7-2.0	10/16/2013	1150	G	S	2	N	N					X	
B-8-1.0	10/16/2013	1226	G	S	2	N	N	X	X	X	X		
B-8-2.0	10/16/2013	1230	G	S	2	N	N					X	
B-9-1.0	10/16/2013	0720	G	S	2	N	N			X	X		
B-9-2.0	10/16/2013	0735	G	S	2	N	N					X	
B-10-1.0	10/16/2013	0740	G	S	2	N	N			X	X		
B-10-2.0	10/16/2013	0755	G	S	2	N	N					X	
B-11-1.0	10/16/2013	0805	G	S	2	N	N			X	X		
B-11-2.0	10/16/2013	0810	G	S	2	N	N					X	
B-12-1.0	10/16/2013	0820	G	S	2	N	N			X	X		
B-12-2.0	10/16/2013	0825	G	S	2	N	N					X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for ________ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No

Custody Seal No.:

Cooler Temp. (°C): Obs'd:______ Corr'd:______ Therm ID No.:______

Relinquished by: Charles Rome	Company: Vista Environmental	Date/Time: 10/16/13 1555	Received by:	Company: TA	Date/Time: 10/16/13 1555
Relinquished by:	Company: TA	Date/Time: 10/16/13 1710	Received by:	Company: TA	Date/Time: 10/16/13 1710
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Login Sample Receipt Checklist

Client: Vista Environmental Consulting, Inc

Job Number: 720-53093-1

Login Number: 53093

List Source: TestAmerica Pleasanton

List Number: 1

Creator: Mullen, Joan

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Vista Environmental Consulting, Inc

Job Number: 720-53093-1

Login Number: 53093
List Number: 1
Creator: Kelsey, Shawn M

List Source: TestAmerica Chicago
List Creation: 10/18/13 11:16 AM

Question	**Answer**	**Comment**
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-53093-2
Client Project/Site: Boston/Hampton Road Sites

For:
Vista Environmental Consulting, Inc
2984 Teagarden Street
San Leandro, California 94577

Attn: Jeff Austin

Authorized for release by:
11/4/2013 2:33:23 PM

Dimple Sharma, Project Manager I
(925)484-1919
dimple.sharma@testamericainc.com

1
2
3
4
5
6
7
8
9
10
11
12
13
14

Table of Contents

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-2

Job ID: 720-53093-2

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative
720-53093-2

Comments

No additional comments.

Receipt

The samples were received on 10/16/2013 5:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.6º C and 4.7º C.

Metals

No analytical or quality issues were noted.

Client Sample ID: B-9-1.0 Lab Sample ID: 720-53093-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	17		3.9		mg/Kg	4		6010B	Total/NA
Barium	180		1.9		mg/Kg	4		6010B	Total/NA
Chromium	46		1.9		mg/Kg	4		6010B	Total/NA
Lead	71		1.9		mg/Kg	4		6010B	Total/NA
Mercury	0.063		0.0091		mg/Kg	1		7471A	Total/NA

Client Sample ID: B-10-1.0 Lab Sample ID: 720-53093-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	47		3.9		mg/Kg	4		6010B	Total/NA
Barium	310		1.9		mg/Kg	4		6010B	Total/NA
Cadmium	1.9		0.49		mg/Kg	4		6010B	Total/NA
Chromium	46		1.9		mg/Kg	4		6010B	Total/NA
Lead	440		1.9		mg/Kg	4		6010B	Total/NA
Mercury	0.11		0.0090		mg/Kg	1		7471A	Total/NA

Client Sample ID: B-11-1.0 Lab Sample ID: 720-53093-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	8.3		3.7		mg/Kg	4		6010B	Total/NA
Barium	170		1.8		mg/Kg	4		6010B	Total/NA
Chromium	38		1.8		mg/Kg	4		6010B	Total/NA
Lead	130		1.8		mg/Kg	4		6010B	Total/NA
Mercury	0.18		0.0094		mg/Kg	1		7471A	Total/NA

Client Sample ID: B-12-1.0 Lab Sample ID: 720-53093-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	7.8		3.8		mg/Kg	4		6010B	Total/NA
Barium	930		1.9		mg/Kg	4		6010B	Total/NA
Cadmium	0.91		0.48		mg/Kg	4		6010B	Total/NA
Chromium	200		1.9		mg/Kg	4		6010B	Total/NA
Lead	630		1.9		mg/Kg	4		6010B	Total/NA
Mercury	0.13		0.0097		mg/Kg	1		7471A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: B-9-1.0
Date Collected: 10/16/13 07:20
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-17
Matrix: Solid

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**17**		3.9		mg/Kg		10/31/13 17:42	11/01/13 12:35	4
Barium	**180**		1.9		mg/Kg		10/31/13 17:42	11/01/13 12:35	4
Cadmium	ND		0.49		mg/Kg		10/31/13 17:42	11/01/13 12:35	4
Chromium	**46**		1.9		mg/Kg		10/31/13 17:42	11/01/13 12:35	4
Lead	**71**		1.9		mg/Kg		10/31/13 17:42	11/01/13 12:35	4
Selenium	ND		3.9		mg/Kg		10/31/13 17:42	11/01/13 12:35	4
Silver	ND		0.97		mg/Kg		10/31/13 17:42	11/01/13 12:35	4

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.063**		0.0091		mg/Kg		10/31/13 20:51	11/01/13 17:25	1

1 2 3 4 5 6 7 8 9 10 11 12 13 14

Client Sample ID: B-10-1.0

Lab Sample ID: 720-53093-19

Date Collected: 10/16/13 07:40
Matrix: Solid
Date Received: 10/16/13 17:10

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**47**		3.9		mg/Kg		10/31/13 17:42	11/01/13 12:39	4
Barium	**310**		1.9		mg/Kg		10/31/13 17:42	11/01/13 12:39	4
Cadmium	**1.9**		0.49		mg/Kg		10/31/13 17:42	11/01/13 12:39	4
Chromium	**46**		1.9		mg/Kg		10/31/13 17:42	11/01/13 12:39	4
Lead	**440**		1.9		mg/Kg		10/31/13 17:42	11/01/13 12:39	4
Selenium	ND		3.9		mg/Kg		10/31/13 17:42	11/01/13 12:39	4
Silver	ND		0.97		mg/Kg		10/31/13 17:42	11/01/13 12:39	4

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.11**		0.0090		mg/Kg		10/31/13 20:51	11/01/13 17:28	1

Client Sample Results

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-2

Client Sample ID: B-11-1.0

Date Collected: 10/16/13 08:05
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-21

Matrix: Solid

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**8.3**		3.7		mg/Kg		10/31/13 17:42	11/01/13 12:44	4
Barium	**170**		1.8		mg/Kg		10/31/13 17:42	11/01/13 12:44	4
Cadmium	ND		0.46		mg/Kg		10/31/13 17:42	11/01/13 12:44	4
Chromium	**38**		1.8		mg/Kg		10/31/13 17:42	11/01/13 12:44	4
Lead	**130**		1.8		mg/Kg		10/31/13 17:42	11/01/13 12:44	4
Selenium	ND		3.7		mg/Kg		10/31/13 17:42	11/01/13 12:44	4
Silver	ND		0.92		mg/Kg		10/31/13 17:42	11/01/13 12:44	4

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.18**		0.0094		mg/Kg		10/31/13 20:51	11/01/13 17:30	1

Client Sample Results

1
2
3
4
5
6
7
8
9
10
11
12
13
14

Client Sample ID: B-12-1.0

Date Collected: 10/16/13 08:20
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-23
Matrix: Solid

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**7.8**		3.8		mg/Kg		10/31/13 17:42	11/01/13 12:48	4
Barium	**930**		1.9		mg/Kg		10/31/13 17:42	11/01/13 12:48	4
Cadmium	**0.91**		0.48		mg/Kg		10/31/13 17:42	11/01/13 12:48	4
Chromium	**200**		1.9		mg/Kg		10/31/13 17:42	11/01/13 12:48	4
Lead	**630**		1.9		mg/Kg		10/31/13 17:42	11/01/13 12:48	4
Selenium	ND		3.8		mg/Kg		10/31/13 17:42	11/01/13 12:48	4
Silver	ND		0.95		mg/Kg		10/31/13 17:42	11/01/13 12:48	4

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.13**		0.0097		mg/Kg		10/31/13 20:51	11/01/13 17:32	1

QC Sample Results

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 720-147501/1-A
Matrix: Solid
Analysis Batch: 147565

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147501

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0		mg/Kg		10/31/13 17:42	11/01/13 10:41	1
Barium	ND		0.50		mg/Kg		10/31/13 17:42	11/01/13 10:41	1
Cadmium	ND		0.13		mg/Kg		10/31/13 17:42	11/01/13 10:41	1
Chromium	ND		0.50		mg/Kg		10/31/13 17:42	11/01/13 10:41	1
Lead	ND		0.50		mg/Kg		10/31/13 17:42	11/01/13 10:41	1
Selenium	ND		1.0		mg/Kg		10/31/13 17:42	11/01/13 10:41	1
Silver	ND		0.25		mg/Kg		10/31/13 17:42	11/01/13 10:41	1

Lab Sample ID: LCS 720-147501/2-A
Matrix: Solid
Analysis Batch: 147565

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147501

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic			50.0	44.0		mg/Kg		88	80 - 120		
Barium			50.0	45.7		mg/Kg		91	80 - 120		
Cadmium			50.0	47.5		mg/Kg		95	80 - 120		
Chromium			50.0	46.8		mg/Kg		94	80 - 120		
Lead			50.0	46.2		mg/Kg		92	80 - 120		
Selenium			50.0	42.7		mg/Kg		85	80 - 120		
Silver			25.0	24.7		mg/Kg		99	80 - 120		

Lab Sample ID: LCSD 720-147501/3-A
Matrix: Solid
Analysis Batch: 147565

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147501

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic			50.0	45.2		mg/Kg		90	80 - 120	3	20
Barium			50.0	47.4		mg/Kg		95	80 - 120	4	20
Cadmium			50.0	48.3		mg/Kg		97	80 - 120	2	20
Chromium			50.0	48.3		mg/Kg		97	80 - 120	3	20
Lead			50.0	47.3		mg/Kg		95	80 - 120	2	20
Selenium			50.0	44.0		mg/Kg		88	80 - 120	3	20
Silver			25.0	25.0		mg/Kg		100	80 - 120	1	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 720-147521/1-A
Matrix: Solid
Analysis Batch: 147585

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147521

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.010		mg/Kg		10/31/13 20:51	11/01/13 16:02	1

Lab Sample ID: LCS 720-147521/2-A
Matrix: Solid
Analysis Batch: 147585

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147521

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.833	0.942		mg/Kg		113	80 - 120		

Method: 7471A - Mercury (CVAA) (Continued)

Lab Sample ID: LCSD 720-147521/3-A
Matrix: Solid
Analysis Batch: 147585

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147521

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.833	0.900		mg/Kg		108	80 - 120	5	20

Metals

Prep Batch: 147501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-17	B-9-1.0	Total/NA	Solid	3050B	
720-53093-19	B-10-1.0	Total/NA	Solid	3050B	
720-53093-21	B-11-1.0	Total/NA	Solid	3050B	
720-53093-23	B-12-1.0	Total/NA	Solid	3050B	
LCS 720-147501/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 720-147501/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
MB 720-147501/1-A	Method Blank	Total/NA	Solid	3050B	

Prep Batch: 147521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-17	B-9-1.0	Total/NA	Solid	7471A	
720-53093-19	B-10-1.0	Total/NA	Solid	7471A	
720-53093-21	B-11-1.0	Total/NA	Solid	7471A	
720-53093-23	B-12-1.0	Total/NA	Solid	7471A	
LCS 720-147521/2-A	Lab Control Sample	Total/NA	Solid	7471A	
LCSD 720-147521/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	
MB 720-147521/1-A	Method Blank	Total/NA	Solid	7471A	

Analysis Batch: 147565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-17	B-9-1.0	Total/NA	Solid	6010B	147501
720-53093-19	B-10-1.0	Total/NA	Solid	6010B	147501
720-53093-21	B-11-1.0	Total/NA	Solid	6010B	147501
720-53093-23	B-12-1.0	Total/NA	Solid	6010B	147501
LCS 720-147501/2-A	Lab Control Sample	Total/NA	Solid	6010B	147501
LCSD 720-147501/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	147501
MB 720-147501/1-A	Method Blank	Total/NA	Solid	6010B	147501

Analysis Batch: 147585

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 720-147521/2-A	Lab Control Sample	Total/NA	Solid	7471A	147521
LCSD 720-147521/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	147521
MB 720-147521/1-A	Method Blank	Total/NA	Solid	7471A	147521

Analysis Batch: 147598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-17	B-9-1.0	Total/NA	Solid	7471A	147521
720-53093-19	B-10-1.0	Total/NA	Solid	7471A	147521
720-53093-21	B-11-1.0	Total/NA	Solid	7471A	147521
720-53093-23	B-12-1.0	Total/NA	Solid	7471A	147521

Lab Chronicle

1 2 3 4 5 6 7 8 9 10 11 12 13 14

Client Sample ID: B-9-1.0

Lab Sample ID: 720-53093-17

Date Collected: 10/16/13 07:20

Matrix: Solid

Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			147501	10/31/13 17:42	CTD	TAL PLS
Total/NA	Analysis	6010B		4	147565	11/01/13 12:35	EFH	TAL PLS
Total/NA	Prep	7471A			147521	10/31/13 20:51	JCR	TAL PLS
Total/NA	Analysis	7471A		1	147598	11/01/13 17:25	SLK	TAL PLS

Client Sample ID: B-10-1.0

Lab Sample ID: 720-53093-19

Date Collected: 10/16/13 07:40

Matrix: Solid

Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			147501	10/31/13 17:42	CTD	TAL PLS
Total/NA	Analysis	6010B		4	147565	11/01/13 12:39	EFH	TAL PLS
Total/NA	Prep	7471A			147521	10/31/13 20:51	JCR	TAL PLS
Total/NA	Analysis	7471A		1	147598	11/01/13 17:28	SLK	TAL PLS

Client Sample ID: B-11-1.0

Lab Sample ID: 720-53093-21

Date Collected: 10/16/13 08:05

Matrix: Solid

Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			147501	10/31/13 17:42	CTD	TAL PLS
Total/NA	Analysis	6010B		4	147565	11/01/13 12:44	EFH	TAL PLS
Total/NA	Prep	7471A			147521	10/31/13 20:51	JCR	TAL PLS
Total/NA	Analysis	7471A		1	147598	11/01/13 17:30	SLK	TAL PLS

Client Sample ID: B-12-1.0

Lab Sample ID: 720-53093-23

Date Collected: 10/16/13 08:20

Matrix: Solid

Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			147501	10/31/13 17:42	CTD	TAL PLS
Total/NA	Analysis	6010B		4	147565	11/01/13 12:48	EFH	TAL PLS
Total/NA	Prep	7471A			147521	10/31/13 20:51	JCR	TAL PLS
Total/NA	Analysis	7471A		1	147598	11/01/13 17:32	SLK	TAL PLS

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Certification Summary

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-2

Laboratory: TestAmerica Pleasanton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-14

Method Summary

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-2

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL PLS
7471A	Mercury (CVAA)	SW846	TAL PLS

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Sample Summary

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-53093-17	B-9-1.0	Solid	10/16/13 07:20	10/16/13 17:10
720-53093-19	B-10-1.0	Solid	10/16/13 07:40	10/16/13 17:10
720-53093-21	B-11-1.0	Solid	10/16/13 08:05	10/16/13 17:10
720-53093-23	B-12-1.0	Solid	10/16/13 08:20	10/16/13 17:10

Sharma, Dimple 720-53093-2

From: Charlie Rome [charlie@albionpartners.com]
Sent: Thursday, October 31, 2013 2:12 PM
To: Sharma, Dimple
Cc: 'Jeff Austin'
Subject: Additional analysis Boston/Hampton Site

Dimple,

Our client would like to analyze samples collected from 1 foot bgs from locations B-9, B-10, B-11, and B-12 for RCRA 8 Metals on a three day turnaround. Please confirm this is possible and when we can have the results.

Charles Rome
Albion Partners
410 China Basin Street
San Francisco, CA 94158
415-355-6646 office
510-301-9290 cell

RUSH

Login Sample Receipt Checklist

Client: Vista Environmental Consulting, Inc

Job Number: 720-53093-2

Login Number: 53093

List Source: TestAmerica Pleasanton

List Number: 1

Creator: Mullen, Joan

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-53093-3
Client Project/Site: Boston/Hampton Road Sites

For:
Vista Environmental Consulting, Inc
2984 Teagarden Street
San Leandro, California 94577

Attn: Jeff Austin

Authorized for release by:
11/7/2013 4:51:43 PM

Dimple Sharma, Project Manager I
(925)484-1919
dimple.sharma@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1
2
3
4
5
6
7
8
9
10
11
12
13
14

Table of Contents

Definitions/Glossary

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
X	Surrogate is outside control limits

General Chemistry

Qualifier	Qualifier Description
F	MS/MSD Recovery and/or RPD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-3

Job ID: 720-53093-3

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative
720-53093-3

Comments
No additional comments.

Receipt
The samples were received on 10/16/2013 5:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.6º C and 4.7º C.

Except:

Could not read labels for samples B-10-1.0 and B-12-1.0. Logged those 2 samples on hold.

GC Semi VOA
Method 8081A: The following sample was prepared outside the method defined holding time because the request for the test was made after the holding time for the sample expired: B-11-2.0 (720-53093-22), B-12-2.0 (720-53093-24), B-2-2.0 (720-53093-4), B-3-2.0 (720-53093-6), B-5-2.0 (720-53093-10), B-6-2.0 (720-53093-12), B-8-2.0 (720-53093-16).

Method 8081A: The % RPD between the primary and confirmation columns is >40% for sample B-7-2.0 (720-53093-14). Due to the coelution of a non-target peak, the lower value has been reported instead of the higher value for the following compound: 4,4'-DDD.

Method 8081A: The % RPD between the primary and confirmation columns is >40% for sample B-10-2.0 (720-53093-20). Due to the coelution of a non-target peak, the lower value has been reported instead of the higher value for the following compounds: Alpha-chlodane; gamma-chlodane.

Method 8081A: The following sample was diluted due to the abundance of non-target analytes: B-10-2.0 (720-53093-20), B-7-2.0 (720-53093-14). Elevated reporting limits (RLs) are provided.

Method 8081A: Surrogate recovery for the following sample was outside control limits: B-7-2.0 (720-53093-14). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No other analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

General Chemistry
No analytical or quality issues were noted.

Organic Prep
No analytical or quality issues were noted.

Detection Summary

Client Sample ID: B-2-2.0 Lab Sample ID: 720-53093-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4,4'-DDT	3.0	H	2.0		ug/Kg	1		8081A	Total/NA
Cadmium	1.4		0.46		mg/Kg	4		6010B	Total/NA
Lead	350		1.9		mg/Kg	4		6010B	Total/NA
Arsenic	5.2		3.7		mg/Kg	4		6010B	Total/NA

Client Sample ID: B-3-2.0 Lab Sample ID: 720-53093-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dieldrin	2.8	H	1.9		ug/Kg	1		8081A	Total/NA
4,4'-DDT	3.9	H	1.9		ug/Kg	1		8081A	Total/NA
Lead	140		1.9		mg/Kg	4		6010B	Total/NA
Arsenic	5.0		3.8		mg/Kg	4		6010B	Total/NA

Client Sample ID: B-5-1.0 Lab Sample ID: 720-53093-9

No Detections.

Client Sample ID: B-5-2.0 Lab Sample ID: 720-53093-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dieldrin	8.9	H	2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDT	5.4	H	2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDE	6.3	H	2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDD	2.3	H	2.0		ug/Kg	1		8081A	Total/NA
Lead	16		1.9		mg/Kg	4		6010B	Total/NA
Arsenic	5.9		3.7		mg/Kg	4		6010B	Total/NA

Client Sample ID: B-6-2.0 Lab Sample ID: 720-53093-12

No Detections.

Client Sample ID: B-7-2.0 Lab Sample ID: 720-53093-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dieldrin	610	H	19		ug/Kg	10		8081A	Total/NA
4,4'-DDT	170	H	19		ug/Kg	10		8081A	Total/NA
4,4'-DDE	100	H	19		ug/Kg	10		8081A	Total/NA
4,4'-DDD	33	H p	19		ug/Kg	10		8081A	Total/NA
Endosulfan sulfate	33	H	19		ug/Kg	10		8081A	Total/NA
Lead	93		1.9		mg/Kg	4		6010B	Total/NA
Arsenic	6.7		3.8		mg/Kg	4		6010B	Total/NA

Client Sample ID: B-8-1.0 Lab Sample ID: 720-53093-15

No Detections.

Client Sample ID: B-8-2.0 Lab Sample ID: 720-53093-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dieldrin	50	H	2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDT	17	H	2.0		ug/Kg	1		8081A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: B-8-2.0 (Continued) — Lab Sample ID: 720-53093-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4,4'-DDE	8.6	H	2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDD	5.4	H	2.0		ug/Kg	1		8081A	Total/NA
Lead	12		2.0		mg/Kg	4		6010B	Total/NA
Arsenic	6.7		4.0		mg/Kg	4		6010B	Total/NA

Client Sample ID: B-10-2.0 — Lab Sample ID: 720-53093-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4,4'-DDT	120	H	4.0		ug/Kg	2		8081A	Total/NA
4,4'-DDE	170	H	4.0		ug/Kg	2		8081A	Total/NA
Chlordane (technical)	720	H	80		ug/Kg	2		8081A	Total/NA
alpha-Chlordane	100	H p	4.0		ug/Kg	2		8081A	Total/NA
gamma-Chlordane	90	H p	4.0		ug/Kg	2		8081A	Total/NA

Client Sample ID: B-11-2.0 — Lab Sample ID: 720-53093-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dieldrin	3.3	H p	2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDT	10	H	2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDE	8.9	H	2.0		ug/Kg	1		8081A	Total/NA
4,4'-DDD	4.6	H p	2.0		ug/Kg	1		8081A	Total/NA

Client Sample ID: B-12-2.0 — Lab Sample ID: 720-53093-24

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client Sample ID: B-2-2.0

Lab Sample ID: 720-53093-4

Date Collected: 10/16/13 09:55
Matrix: Solid
Date Received: 10/16/13 17:10

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
Dieldrin	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
Endrin aldehyde	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
Endrin	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
Endrin ketone	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
Heptachlor	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
Heptachlor epoxide	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
4,4'-DDT	**3.0**	**H**	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
4,4'-DDE	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
4,4'-DDD	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
Endosulfan I	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
Endosulfan II	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
alpha-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
beta-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
gamma-BHC (Lindane)	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
delta-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
Endosulfan sulfate	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
Methoxychlor	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
Toxaphene	ND	H	40		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
Chlordane (technical)	ND	H	40		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
alpha-Chlordane	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1
gamma-Chlordane	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 01:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*95*		*57 - 122*	*11/04/13 18:51*	*11/05/13 01:36*	*1*
DCB Decachlorobiphenyl	*101*		*21 - 136*	*11/04/13 18:51*	*11/05/13 01:36*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**1.4**		0.46		mg/Kg		11/04/13 17:37	11/05/13 13:21	4
Lead	**350**		1.9		mg/Kg		11/04/13 17:37	11/05/13 13:21	4
Arsenic	**5.2**		3.7		mg/Kg		11/04/13 17:37	11/05/13 13:21	4

Client Sample Results

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-3

Client Sample ID: B-3-2.0

Date Collected: 10/16/13 10:10
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-6
Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
Dieldrin	**2.8**	**H**	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
Endrin aldehyde	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
Endrin	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
Endrin ketone	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
Heptachlor	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
Heptachlor epoxide	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
4,4'-DDT	**3.9**	**H**	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
4,4'-DDE	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
4,4'-DDD	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
Endosulfan I	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
Endosulfan II	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
alpha-BHC	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
beta-BHC	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
gamma-BHC (Lindane)	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
delta-BHC	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
Endosulfan sulfate	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
Methoxychlor	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
Toxaphene	ND	H	39		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
Chlordane (technical)	ND	H	39		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
alpha-Chlordane	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1
gamma-Chlordane	ND	H	1.9		ug/Kg		11/04/13 18:51	11/05/13 01:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*103*		*57 - 122*	*11/04/13 18:51*	*11/05/13 01:53*	*1*
DCB Decachlorobiphenyl	*98*		*21 - 136*	*11/04/13 18:51*	*11/05/13 01:53*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**140**		1.9		mg/Kg		11/04/13 17:37	11/05/13 13:25	4
Arsenic	**5.0**		3.8		mg/Kg		11/04/13 17:37	11/05/13 13:25	4

Client Sample ID: B-5-1.0

Lab Sample ID: 720-53093-9

Date Collected: 10/16/13 10:45

Matrix: Solid

Date Received: 10/16/13 17:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		2.0		mg/Kg		11/05/13 12:00	11/06/13 17:42	2

Client Sample Results

Client Sample ID: B-5-2.0

Date Collected: 10/16/13 10:50
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-10

Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
Dieldrin	**8.9**	**H**	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
Endrin aldehyde	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
Endrin	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
Endrin ketone	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
Heptachlor	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
Heptachlor epoxide	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
4,4'-DDT	**5.4**	**H**	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
4,4'-DDE	**6.3**	**H**	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
4,4'-DDD	**2.3**	**H**	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
Endosulfan I	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
Endosulfan II	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
alpha-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
beta-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
gamma-BHC (Lindane)	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
delta-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
Endosulfan sulfate	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
Methoxychlor	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
Toxaphene	ND	H	40		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
Chlordane (technical)	ND	H	40		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
alpha-Chlordane	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1
gamma-Chlordane	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*87*		*57 - 122*	*11/04/13 18:51*	*11/05/13 02:09*	*1*
DCB Decachlorobiphenyl	*86*		*21 - 136*	*11/04/13 18:51*	*11/05/13 02:09*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**16**		1.9		mg/Kg		11/04/13 17:37	11/05/13 13:38	4
Arsenic	**5.9**		3.7		mg/Kg		11/04/13 17:37	11/05/13 13:38	4

Client Sample Results

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-3

Client Sample ID: B-6-2.0

Date Collected: 10/16/13 11:30
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-12
Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
Dieldrin	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
Endrin aldehyde	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
Endrin	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
Endrin ketone	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
Heptachlor	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
Heptachlor epoxide	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
4,4'-DDT	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
4,4'-DDE	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
4,4'-DDD	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
Endosulfan I	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
Endosulfan II	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
alpha-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
beta-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
gamma-BHC (Lindane)	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
delta-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
Endosulfan sulfate	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
Methoxychlor	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
Toxaphene	ND	H	40		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
Chlordane (technical)	ND	H	40		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
alpha-Chlordane	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1
gamma-Chlordane	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 02:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*89*		*57 - 122*	*11/04/13 18:51*	*11/05/13 02:26*	*1*
DCB Decachlorobiphenyl	*94*		*21 - 136*	*11/04/13 18:51*	*11/05/13 02:26*	*1*

Client Sample Results

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-3

Client Sample ID: B-7-2.0

Date Collected: 10/16/13 11:50
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-14
Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND	H	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
Dieldrin	**610**	**H**	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
Endrin aldehyde	ND	H	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
Endrin	ND	H	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
Endrin ketone	ND	H	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
Heptachlor	ND	H	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
Heptachlor epoxide	ND	H	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
4,4'-DDT	**170**	**H**	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
4,4'-DDE	**100**	**H**	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
4,4'-DDD	**33**	**H p**	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
Endosulfan I	ND	H	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
Endosulfan II	ND	H	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
alpha-BHC	ND	H	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
beta-BHC	ND	H	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
gamma-BHC (Lindane)	ND	H	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
delta-BHC	ND	H	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
Endosulfan sulfate	**33**	**H**	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
Methoxychlor	ND	H	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
Toxaphene	ND	H	390		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
Chlordane (technical)	ND	H	390		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
alpha-Chlordane	ND	H	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10
gamma-Chlordane	ND	H	19		ug/Kg		11/04/13 18:51	11/06/13 03:15	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*121*		*57 - 122*	*11/04/13 18:51*	*11/06/13 03:15*	*10*
DCB Decachlorobiphenyl	*163*	*X*	*21 - 136*	*11/04/13 18:51*	*11/06/13 03:15*	*10*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**93**		1.9		mg/Kg		11/04/13 17:37	11/05/13 13:42	4
Arsenic	**6.7**		3.8		mg/Kg		11/04/13 17:37	11/05/13 13:42	4

Client Sample ID: B-8-1.0
Lab Sample ID: 720-53093-15
Date Collected: 10/16/13 12:20
Matrix: Solid
Date Received: 10/16/13 17:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		1.9		mg/Kg		11/05/13 12:00	11/06/13 17:54	2

Client Sample Results

Client Sample ID: B-8-2.0

Lab Sample ID: 720-53093-16

Date Collected: 10/16/13 12:30
Date Received: 10/16/13 17:10
Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
Dieldrin	**50**	**H**	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
Endrin aldehyde	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
Endrin	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
Endrin ketone	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
Heptachlor	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
Heptachlor epoxide	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
4,4'-DDT	**17**	**H**	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
4,4'-DDE	**8.6**	**H**	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
4,4'-DDD	**5.4**	**H**	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
Endosulfan I	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
Endosulfan II	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
alpha-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
beta-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
gamma-BHC (Lindane)	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
delta-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
Endosulfan sulfate	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
Methoxychlor	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
Toxaphene	ND	H	40		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
Chlordane (technical)	ND	H	40		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
alpha-Chlordane	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1
gamma-Chlordane	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*111*		*57 - 122*	*11/04/13 18:51*	*11/05/13 03:00*	*1*
DCB Decachlorobiphenyl	*50*	*p*	*21 - 136*	*11/04/13 18:51*	*11/05/13 03:00*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**12**		2.0		mg/Kg		11/04/13 17:37	11/05/13 13:46	4
Arsenic	**6.7**		4.0		mg/Kg		11/04/13 17:37	11/05/13 13:46	4

Client Sample ID: B-10-2.0

Lab Sample ID: 720-53093-20

Date Collected: 10/16/13 07:55

Matrix: Solid

Date Received: 10/16/13 17:10

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND	H	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
Dieldrin	ND	H	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
Endrin aldehyde	ND	H	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
Endrin	ND	H	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
Endrin ketone	ND	H	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
Heptachlor	ND	H	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
Heptachlor epoxide	ND	H	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
4,4'-DDT	**120**	**H**	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
4,4'-DDE	**170**	**H**	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
4,4'-DDD	ND	H	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
Endosulfan I	ND	H	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
Endosulfan II	ND	H	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
alpha-BHC	ND	H	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
beta-BHC	ND	H	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
gamma-BHC (Lindane)	ND	H	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
delta-BHC	ND	H	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
Endosulfan sulfate	ND	H	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
Methoxychlor	ND	H	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
Toxaphene	ND	H	80		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
Chlordane (technical)	**720**	**H**	80		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
alpha-Chlordane	**100**	**H p**	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2
gamma-Chlordane	**90**	**H p**	4.0		ug/Kg		11/04/13 18:51	11/06/13 03:32	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*96*		*57 - 122*	*11/04/13 18:51*	*11/06/13 03:32*	*2*
DCB Decachlorobiphenyl	*104*		*21 - 136*	*11/04/13 18:51*	*11/06/13 03:32*	*2*

Client Sample Results

Client Sample ID: B-11-2.0

Lab Sample ID: 720-53093-22

Date Collected: 10/16/13 08:10
Matrix: Solid
Date Received: 10/16/13 17:10

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
Dieldrin	**3.3**	**H p**	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
Endrin aldehyde	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
Endrin	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
Endrin ketone	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
Heptachlor	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
Heptachlor epoxide	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
4,4'-DDT	**10**	**H**	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
4,4'-DDE	**8.9**	**H**	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
4,4'-DDD	**4.6**	**H p**	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
Endosulfan I	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
Endosulfan II	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
alpha-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
beta-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
gamma-BHC (Lindane)	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
delta-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
Endosulfan sulfate	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
Methoxychlor	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
Toxaphene	ND	H	39		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
Chlordane (technical)	ND	H	39		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
alpha-Chlordane	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1
gamma-Chlordane	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*92*		*57 - 122*	*11/04/13 18:51*	*11/05/13 03:34*	*1*
DCB Decachlorobiphenyl	*86*		*21 - 136*	*11/04/13 18:51*	*11/05/13 03:34*	*1*

Client Sample Results

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-3

Client Sample ID: B-12-2.0

Date Collected: 10/16/13 08:25
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-24

Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
Dieldrin	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
Endrin aldehyde	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
Endrin	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
Endrin ketone	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
Heptachlor	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
Heptachlor epoxide	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
4,4'-DDT	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
4,4'-DDE	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
4,4'-DDD	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
Endosulfan I	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
Endosulfan II	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
alpha-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
beta-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
gamma-BHC (Lindane)	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
delta-BHC	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
Endosulfan sulfate	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
Methoxychlor	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
Toxaphene	ND	H	39		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
Chlordane (technical)	ND	H	39		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
alpha-Chlordane	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1
gamma-Chlordane	ND	H	2.0		ug/Kg		11/04/13 18:51	11/05/13 03:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*111*		*57 - 122*	*11/04/13 18:51*	*11/05/13 03:51*	*1*
DCB Decachlorobiphenyl	*96*		*21 - 136*	*11/04/13 18:51*	*11/05/13 03:51*	*1*

QC Sample Results

Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 720-147635/1-A
Matrix: Solid
Analysis Batch: 147652

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147635

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
Dieldrin	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
Endrin aldehyde	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
Endrin	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
Endrin ketone	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
Heptachlor	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
Heptachlor epoxide	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
4,4'-DDT	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
4,4'-DDE	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
4,4'-DDD	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
Endosulfan I	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
Endosulfan II	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
alpha-BHC	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
beta-BHC	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
delta-BHC	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
Endosulfan sulfate	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
Methoxychlor	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
Toxaphene	ND		40		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
Chlordane (technical)	ND		40		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
alpha-Chlordane	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1
gamma-Chlordane	ND		2.0		ug/Kg		11/04/13 10:06	11/04/13 22:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*101*		*57 - 122*	*11/04/13 10:06*	*11/04/13 22:30*	*1*
DCB Decachlorobiphenyl	*112*		*21 - 136*	*11/04/13 10:06*	*11/04/13 22:30*	*1*

Lab Sample ID: LCS 720-147635/2-A
Matrix: Solid
Analysis Batch: 147652

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147635

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	16.5	16.5		ug/Kg		101	65 - 120
Dieldrin	16.5	17.1		ug/Kg		104	72 - 120
Endrin aldehyde	16.5	17.0		ug/Kg		104	68 - 120
Endrin	16.5	17.7		ug/Kg		107	68 - 120
Endrin ketone	16.5	16.9		ug/Kg		103	67 - 120
Heptachlor	16.5	16.1		ug/Kg		98	69 - 120
Heptachlor epoxide	16.5	17.6		ug/Kg		107	68 - 120
4,4'-DDT	16.5	17.9		ug/Kg		109	63 - 127
4,4'-DDE	16.5	17.3		ug/Kg		105	70 - 120
4,4'-DDD	16.5	17.8		ug/Kg		108	69 - 120
Endosulfan I	16.5	16.8		ug/Kg		102	62 - 120
Endosulfan II	16.5	17.5		ug/Kg		106	65 - 120
alpha-BHC	16.5	16.2		ug/Kg		98	62 - 120
beta-BHC	16.5	17.3		ug/Kg		105	74 - 124
gamma-BHC (Lindane)	16.5	16.6		ug/Kg		101	72 - 120
delta-BHC	16.5	17.5		ug/Kg		106	64 - 120

QC Sample Results

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 720-147635/2-A
Matrix: Solid
Analysis Batch: 147652

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147635

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Endosulfan sulfate	16.5	17.8		ug/Kg		108	67 - 120
Methoxychlor	16.5	18.9		ug/Kg		115	71 - 132
alpha-Chlordane	16.5	17.1		ug/Kg		104	70 - 120
gamma-Chlordane	16.5	17.0		ug/Kg		103	68 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*100*		*57 - 122*
DCB Decachlorobiphenyl	*116*		*21 - 136*

Lab Sample ID: LCSD 720-147635/3-A
Matrix: Solid
Analysis Batch: 147652

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147635

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	16.3	15.5		ug/Kg		95	65 - 120	7	20
Dieldrin	16.3	15.7		ug/Kg		96	72 - 120	9	20
Endrin aldehyde	16.3	14.2		ug/Kg		87	68 - 120	18	20
Endrin	16.3	16.1		ug/Kg		99	68 - 120	9	20
Endrin ketone	16.3	15.4		ug/Kg		94	67 - 120	9	20
Heptachlor	16.3	14.7		ug/Kg		90	69 - 120	9	20
Heptachlor epoxide	16.3	16.1		ug/Kg		99	68 - 120	9	20
4,4'-DDT	16.3	16.3		ug/Kg		100	63 - 127	9	20
4,4'-DDE	16.3	16.0		ug/Kg		98	70 - 120	8	20
4,4'-DDD	16.3	16.2		ug/Kg		99	69 - 120	10	20
Endosulfan I	16.3	15.4		ug/Kg		94	62 - 120	9	20
Endosulfan II	16.3	15.9		ug/Kg		98	65 - 120	9	35
alpha-BHC	16.3	15.0		ug/Kg		92	62 - 120	8	20
beta-BHC	16.3	16.4		ug/Kg		101	74 - 124	5	20
gamma-BHC (Lindane)	16.3	15.3		ug/Kg		94	72 - 120	9	20
delta-BHC	16.3	16.4		ug/Kg		101	64 - 120	6	20
Endosulfan sulfate	16.3	16.1		ug/Kg		99	67 - 120	10	20
Methoxychlor	16.3	17.1		ug/Kg		105	71 - 132	10	20
alpha-Chlordane	16.3	15.8		ug/Kg		97	70 - 120	8	20
gamma-Chlordane	16.3	15.7		ug/Kg		96	68 - 120	8	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*92*		*57 - 122*
DCB Decachlorobiphenyl	*107*		*21 - 136*

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 720-147683/1-A
Matrix: Solid
Analysis Batch: 147750

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147683

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.13		mg/Kg		11/04/13 17:37	11/05/13 11:56	1

QC Sample Results

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 720-147683/1-A
Matrix: Solid
Analysis Batch: 147750

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147683

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.50		mg/Kg		11/04/13 17:37	11/05/13 11:56	1
Arsenic	ND		1.0		mg/Kg		11/04/13 17:37	11/05/13 11:56	1

Lab Sample ID: LCS 720-147683/2-A
Matrix: Solid
Analysis Batch: 147750

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147683

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	50.0	48.7		mg/Kg		97	80 - 120
Lead	50.0	49.3		mg/Kg		99	80 - 120
Arsenic	50.0	48.9		mg/Kg		98	80 - 120

Lab Sample ID: LCSD 720-147683/3-A
Matrix: Solid
Analysis Batch: 147750

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147683

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	50.0	48.1		mg/Kg		96	80 - 120	1	20
Lead	50.0	48.5		mg/Kg		97	80 - 120	2	20
Arsenic	50.0	47.4		mg/Kg		95	80 - 120	3	20

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 500-210266/1-A
Matrix: Solid
Analysis Batch: 210744

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 210266

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		1.0		mg/Kg		11/05/13 12:00	11/06/13 17:37	1

Lab Sample ID: LCS 500-210266/2-A
Matrix: Solid
Analysis Batch: 210744

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 210266

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	10.0	8.21		mg/Kg		82	80 - 120

Lab Sample ID: LCS 500-210266/3-A
Matrix: Solid
Analysis Batch: 210744

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 210266

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	869	753		mg/Kg		87	80 - 120

Method: 7196A - Chromium, Hexavalent (Continued)

Lab Sample ID: 720-53093-9 MS
Matrix: Solid
Analysis Batch: 210744

Client Sample ID: B-5-1.0
Prep Type: Total/NA
Prep Batch: 210266

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	ND		38.9	22.9	F	mg/Kg		59	75 - 125

Lab Sample ID: 720-53093-9 MS
Matrix: Solid
Analysis Batch: 210744

Client Sample ID: B-5-1.0
Prep Type: Total/NA
Prep Batch: 210266

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	ND		838	609	F	mg/Kg		73	75 - 125

Lab Sample ID: 720-53093-9 MSD
Matrix: Solid
Analysis Batch: 210744

Client Sample ID: B-5-1.0
Prep Type: Total/NA
Prep Batch: 210266

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium, hexavalent	ND		39.8	26.2	F	mg/Kg		66	75 - 125	13	30

Lab Sample ID: 720-53093-9 MSD
Matrix: Solid
Analysis Batch: 210744

Client Sample ID: B-5-1.0
Prep Type: Total/NA
Prep Batch: 210266

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium, hexavalent	ND		836	705		mg/Kg		84	75 - 125	15	30

GC Semi VOA

Prep Batch: 147635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-4	B-2-2.0	Total/NA	Solid	3546	
720-53093-6	B-3-2.0	Total/NA	Solid	3546	
720-53093-10	B-5-2.0	Total/NA	Solid	3546	
720-53093-12	B-6-2.0	Total/NA	Solid	3546	
720-53093-14	B-7-2.0	Total/NA	Solid	3546	
720-53093-16	B-8-2.0	Total/NA	Solid	3546	
720-53093-20	B-10-2.0	Total/NA	Solid	3546	
720-53093-22	B-11-2.0	Total/NA	Solid	3546	
720-53093-24	B-12-2.0	Total/NA	Solid	3546	
LCS 720-147635/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCSD 720-147635/3-A	Lab Control Sample Dup	Total/NA	Solid	3546	
MB 720-147635/1-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 147652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-4	B-2-2.0	Total/NA	Solid	8081A	147635
720-53093-6	B-3-2.0	Total/NA	Solid	8081A	147635
720-53093-10	B-5-2.0	Total/NA	Solid	8081A	147635
720-53093-12	B-6-2.0	Total/NA	Solid	8081A	147635
720-53093-16	B-8-2.0	Total/NA	Solid	8081A	147635
720-53093-22	B-11-2.0	Total/NA	Solid	8081A	147635
720-53093-24	B-12-2.0	Total/NA	Solid	8081A	147635
LCS 720-147635/2-A	Lab Control Sample	Total/NA	Solid	8081A	147635
LCSD 720-147635/3-A	Lab Control Sample Dup	Total/NA	Solid	8081A	147635
MB 720-147635/1-A	Method Blank	Total/NA	Solid	8081A	147635

Analysis Batch: 147773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-14	B-7-2.0	Total/NA	Solid	8081A	147635
720-53093-20	B-10-2.0	Total/NA	Solid	8081A	147635

Metals

Prep Batch: 147683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-4	B-2-2.0	Total/NA	Solid	3050B	
720-53093-6	B-3-2.0	Total/NA	Solid	3050B	
720-53093-10	B-5-2.0	Total/NA	Solid	3050B	
720-53093-14	B-7-2.0	Total/NA	Solid	3050B	
720-53093-16	B-8-2.0	Total/NA	Solid	3050B	
LCS 720-147683/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 720-147683/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
MB 720-147683/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 147750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-4	B-2-2.0	Total/NA	Solid	6010B	147683
720-53093-6	B-3-2.0	Total/NA	Solid	6010B	147683
720-53093-10	B-5-2.0	Total/NA	Solid	6010B	147683
720-53093-14	B-7-2.0	Total/NA	Solid	6010B	147683

Metals (Continued)

Analysis Batch: 147750 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-16	B-8-2.0	Total/NA	Solid	6010B	147683
LCS 720-147683/2-A	Lab Control Sample	Total/NA	Solid	6010B	147683
LCSD 720-147683/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	147683
MB 720-147683/1-A	Method Blank	Total/NA	Solid	6010B	147683

General Chemistry

Prep Batch: 210266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-9	B-5-1.0	Total/NA	Solid	3060A	
720-53093-9 MS	B-5-1.0	Total/NA	Solid	3060A	
720-53093-9 MS	B-5-1.0	Total/NA	Solid	3060A	
720-53093-9 MSD	B-5-1.0	Total/NA	Solid	3060A	
720-53093-9 MSD	B-5-1.0	Total/NA	Solid	3060A	
720-53093-15	B-8-1.0	Total/NA	Solid	3060A	
LCS 500-210266/2-A	Lab Control Sample	Total/NA	Solid	3060A	
LCS 500-210266/3-A	Lab Control Sample	Total/NA	Solid	3060A	
MB 500-210266/1-A	Method Blank	Total/NA	Solid	3060A	

Analysis Batch: 210744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-9	B-5-1.0	Total/NA	Solid	7196A	210266
720-53093-9 MS	B-5-1.0	Total/NA	Solid	7196A	210266
720-53093-9 MS	B-5-1.0	Total/NA	Solid	7196A	210266
720-53093-9 MSD	B-5-1.0	Total/NA	Solid	7196A	210266
720-53093-9 MSD	B-5-1.0	Total/NA	Solid	7196A	210266
720-53093-15	B-8-1.0	Total/NA	Solid	7196A	210266
LCS 500-210266/2-A	Lab Control Sample	Total/NA	Solid	7196A	210266
LCS 500-210266/3-A	Lab Control Sample	Total/NA	Solid	7196A	210266
MB 500-210266/1-A	Method Blank	Total/NA	Solid	7196A	210266

Lab Chronicle

Client Sample ID: B-2-2.0
Lab Sample ID: 720-53093-4
Date Collected: 10/16/13 09:55
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			147635	11/04/13 18:51	BB	TAL PLS
Total/NA	Analysis	8081A		1	147652	11/05/13 01:36	JZT	TAL PLS
Total/NA	Prep	3050B			147683	11/04/13 17:37	CTD	TAL PLS
Total/NA	Analysis	6010B		4	147750	11/05/13 13:21	EFH	TAL PLS

Client Sample ID: B-3-2.0
Lab Sample ID: 720-53093-6
Date Collected: 10/16/13 10:10
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			147635	11/04/13 18:51	BB	TAL PLS
Total/NA	Analysis	8081A		1	147652	11/05/13 01:53	JZT	TAL PLS
Total/NA	Prep	3050B			147683	11/04/13 17:37	CTD	TAL PLS
Total/NA	Analysis	6010B		4	147750	11/05/13 13:25	EFH	TAL PLS

Client Sample ID: B-5-1.0
Lab Sample ID: 720-53093-9
Date Collected: 10/16/13 10:45
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			210266	11/05/13 12:00	JLE	TAL CHI
Total/NA	Analysis	7196A		2	210744		JLE	TAL CHI
					(Start)	11/06/13 17:42		
					(End)	11/06/13 17:43		

Client Sample ID: B-5-2.0
Lab Sample ID: 720-53093-10
Date Collected: 10/16/13 10:50
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8081A		1	147652	11/05/13 02:09	JZT	TAL PLS
Total/NA	Prep	3546			147635	11/04/13 18:51	BB	TAL PLS
Total/NA	Prep	3050B			147683	11/04/13 17:37	CTD	TAL PLS
Total/NA	Analysis	6010B		4	147750	11/05/13 13:38	EFH	TAL PLS

Client Sample ID: B-6-2.0
Lab Sample ID: 720-53093-12
Date Collected: 10/16/13 11:30
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			147635	11/04/13 18:51	BB	TAL PLS
Total/NA	Analysis	8081A		1	147652	11/05/13 02:26	JZT	TAL PLS

Client Sample ID: B-7-2.0
Lab Sample ID: 720-53093-14

Date Collected: 10/16/13 11:50
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			147635	11/04/13 18:51	BB	TAL PLS
Total/NA	Analysis	8081A		10	147773	11/06/13 03:15	MQL	TAL PLS
Total/NA	Prep	3050B			147683	11/04/13 17:37	CTD	TAL PLS
Total/NA	Analysis	6010B		4	147750	11/05/13 13:42	EFH	TAL PLS

Client Sample ID: B-8-1.0
Lab Sample ID: 720-53093-15

Date Collected: 10/16/13 12:20
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			210266	11/05/13 12:00	JLE	TAL CHI
Total/NA	Analysis	7196A		2	210744		JLE	TAL CHI
					(Start)	11/06/13 17:54		
					(End)	11/06/13 17:55		

Client Sample ID: B-8-2.0
Lab Sample ID: 720-53093-16

Date Collected: 10/16/13 12:30
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			147635	11/04/13 18:51	BB	TAL PLS
Total/NA	Analysis	8081A		1	147652	11/05/13 03:00	JZT	TAL PLS
Total/NA	Prep	3050B			147683	11/04/13 17:37	CTD	TAL PLS
Total/NA	Analysis	6010B		4	147750	11/05/13 13:46	EFH	TAL PLS

Client Sample ID: B-10-2.0
Lab Sample ID: 720-53093-20

Date Collected: 10/16/13 07:55
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8081A		2	147773	11/06/13 03:32	MQL	TAL PLS
Total/NA	Prep	3546			147635	11/04/13 18:51	BB	TAL PLS

Client Sample ID: B-11-2.0
Lab Sample ID: 720-53093-22

Date Collected: 10/16/13 08:10
Matrix: Solid
Date Received: 10/16/13 17:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			147635	11/04/13 18:51	BB	TAL PLS
Total/NA	Analysis	8081A		1	147652	11/05/13 03:34	JZT	TAL PLS

Client Sample ID: B-12-2.0
Date Collected: 10/16/13 08:25
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-24
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			147635	11/04/13 18:51	BB	TAL PLS
Total/NA	Analysis	8081A		1	147652	11/05/13 03:51	JZT	TAL PLS

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200
TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Certification Summary

Laboratory: TestAmerica Pleasanton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-14

Laboratory: TestAmerica Chicago

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40461	04-30-14
California	NELAP	9	01132CA	04-30-14
Georgia	State Program	4	N/A	04-30-14
Hawaii	State Program	9	N/A	04-30-14
Illinois	NELAP	5	100201	04-30-14
Indiana	State Program	5	C-IL-02	04-30-14
Iowa	State Program	7	82	05-01-14
Kansas	NELAP	7	E-10161	10-31-14 *
Kentucky	State Program	4	90023	12-31-13
Kentucky (UST)	State Program	4	66	04-30-14
Louisiana	NELAP	6	30720	06-30-14
Massachusetts	State Program	1	M-IL035	06-30-14
Mississippi	State Program	4	N/A	04-30-14
North Carolina DENR	State Program	4	291	12-31-13
North Dakota	State Program	8	R-194	04-30-14
Oklahoma	State Program	6	8908	08-31-14
South Carolina	State Program	4	77001	04-30-14
Texas	NELAP	6	T104704252-09-TX	02-28-14
USDA	Federal		P330-12-00038	02-06-15
Wisconsin	State Program	5	999580010	08-31-14
Wyoming	State Program	8	8TMS-Q	04-30-14

* Expired certification is currently pending renewal and is considered valid.

Method Summary

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-3

Method	Method Description	Protocol	Laboratory
8081A	Organochlorine Pesticides (GC)	SW846	TAL PLS
6010B	Metals (ICP)	SW846	TAL PLS
7196A	Chromium, Hexavalent	SW846	TAL CHI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Sample Summary

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-53093-4	B-2-2.0	Solid	10/16/13 09:55	10/16/13 17:10
720-53093-6	B-3-2.0	Solid	10/16/13 10:10	10/16/13 17:10
720-53093-9	B-5-1.0	Solid	10/16/13 10:45	10/16/13 17:10
720-53093-10	B-5-2.0	Solid	10/16/13 10:50	10/16/13 17:10
720-53093-12	B-6-2.0	Solid	10/16/13 11:30	10/16/13 17:10
720-53093-14	B-7-2.0	Solid	10/16/13 11:50	10/16/13 17:10
720-53093-15	B-8-1.0	Solid	10/16/13 12:20	10/16/13 17:10
720-53093-16	B-8-2.0	Solid	10/16/13 12:30	10/16/13 17:10
720-53093-20	B-10-2.0	Solid	10/16/13 07:55	10/16/13 17:10
720-53093-22	B-11-2.0	Solid	10/16/13 08:10	10/16/13 17:10
720-53093-24	B-12-2.0	Solid	10/16/13 08:25	10/16/13 17:10

Sharma, Dimple

720-53093-3

From: Jeff Austin [jeff@vista-env.com]
Sent: Friday, November 01, 2013 5:19 PM
To: Sharma, Dimple
Cc: chuckbove@vista-env.com
Subject: Fw: RE: Boston Road and hampton Road sampling

Dimple,
More analyses for the Boston/Hampton Road project; deeper samples currently on hold. Here is what we need:

B-2-2.0: Lead, cadmium, arsenic, pesticides
B-3-2.0: lead, arsenic, pesticides
B-5-2.0: lead, arsenic, pesticides
B-6-2.0: pesticides
B-7-2.0: lead, arsenic, pesticides
B-8-2.0: lead, arsenic, pesticides
B-10-2.0: pesticides
B-11-2.0: pesticides
B-12-2.0: pesticides

Additional shallow sample analyses:

B-5-1.0: hexavalent chromium
B-8-1.0: hexavalent chromium

Please report only those requested metals. Please also confirm receipt of this email.

Thanks and have a great weekend,
Jeff Austin
Senior Project Manager
Vista Environmental
cell: (415) 218-0027
email: jeff@vista-env.com

From: Freitag, Rod, GSA-Technical Services Department [mailto:rfreitag@acgov.org]
To: 'Chuck Bove' [mailto:chuckbove@vista-env.com]
Cc: Garrison, Jason GSA- Technical Service Department [mailto:jason.garrison@acgov.org], 'Chris Burns' [mailto:chrisburns@vista-env.com], jeff@vista-env.com [mailto:jeff@vista-env.com]
Sent: Fri, 01 Nov 2013 15:23:58 -0800
Subject: RE: Boston Road and hampton Road sampling

Chuck:

.

See below for changes on hexavalent chrome. Thanks.

Rod Freitag, Environmental Program Manager

Alameda County General Services Agency, TSD
1401 Lakeside Drive, Rm. 1115, Oakland, CA 94612
Ph (510) 208-9522 | Fax (510) 208-9530 | QIC 26023
Please consider the environment before printing this email.

Login Sample Receipt Checklist

Client: Vista Environmental Consulting, Inc

Job Number: 720-53093-3

Login Number: 53093

List Source: TestAmerica Pleasanton

List Number: 1

Creator: Mullen, Joan

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Vista Environmental Consulting, Inc

Job Number: 720-53093-3

Login Number: 53093
List Number: 1
Creator: Kelsey, Shawn M

List Source: TestAmerica Chicago
List Creation: 10/18/13 11:16 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

1
2
3
4
5
6
7
8
9
10
11
12
13
14

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-53093-4
Client Project/Site: Boston/Hampton Road Sites

For:
Vista Environmental Consulting, Inc
2984 Teagarden Street
San Leandro, California 94577

Attn: Jeff Austin

Authorized for release by:
11/19/2013 5:02:11 PM

Dimple Sharma, Senior Project Manager
(925)484-1919
dimple.sharma@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Definitions/Glossary

Qualifiers

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 720-53093-4

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative
720-53093-4

Comments
No additional comments.

Receipt
The samples were received on 10/16/2013 5:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.6º C and 4.7º C.

Except:

Could not read labels for samples B-10-1.0 and B-12-1.0. Logged those 2 samples on hold.

Metals
No analytical or quality issues were noted.

General Chemistry
Method 7196A: The following hexavalent chromium sample in batch 212685 was received with insufficient time remaining to perform the analysis within holding time: B-12-1.0 (720-53093-23). (The sample has a 30 day holding time and was received with 2 days till expiration.)

No other analytical or quality issues were noted.

Detection Summary

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-4

Client Sample ID: B-3-2.0 — Lab Sample ID: 720-53093-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.073		0.0095		mg/Kg	1		7471A	Total/NA

Client Sample ID: B-10-2.0 — Lab Sample ID: 720-53093-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	36		1.9		mg/Kg	4		6010B	Total/NA
Arsenic	45		3.8		mg/Kg	4		6010B	Total/NA

Client Sample ID: B-11-2.0 — Lab Sample ID: 720-53093-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	330		2.0		mg/Kg	4		6010B	Total/NA
Arsenic	5.8		4.0		mg/Kg	4		6010B	Total/NA

Client Sample ID: B-12-1.0 — Lab Sample ID: 720-53093-23

No Detections.

Client Sample ID: B-12-2.0 — Lab Sample ID: 720-53093-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	36		1.8		mg/Kg	4		6010B	Total/NA
Lead	10		1.8		mg/Kg	4		6010B	Total/NA
Barium	140		1.8		mg/Kg	4		6010B	Total/NA
Arsenic	5.9		3.6		mg/Kg	4		6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client Sample ID: B-3-2.0

Date Collected: 10/16/13 10:10
Date Received: 10/16/13 17:10

Lab Sample ID: 720-53093-6
Matrix: Solid

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.073**		0.0095		mg/Kg		11/12/13 12:51	11/12/13 16:51	1

Client Sample ID: B-10-2.0
Lab Sample ID: 720-53093-20
Date Collected: 10/16/13 07:55
Matrix: Solid
Date Received: 10/16/13 17:10

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**36**		1.9		mg/Kg		11/12/13 09:45	11/13/13 01:32	4
Arsenic	**45**		3.8		mg/Kg		11/12/13 09:45	11/13/13 01:32	4

Client Sample Results

Client Sample ID: B-11-2.0
Lab Sample ID: 720-53093-22
Date Collected: 10/16/13 08:10
Matrix: Solid
Date Received: 10/16/13 17:10

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**330**		2.0		mg/Kg		11/12/13 09:45	11/13/13 01:36	4
Arsenic	**5.8**		4.0		mg/Kg		11/12/13 09:45	11/13/13 01:36	4

Client Sample Results

Client Sample ID: B-12-1.0 **Lab Sample ID: 720-53093-23**

Date Collected: 10/16/13 08:20 **Matrix: Solid**

Date Received: 10/16/13 17:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND	H	2.0		mg/Kg		11/19/13 11:00	11/19/13 15:59	2

Client Sample ID: B-12-2.0

Lab Sample ID: 720-53093-24

Date Collected: 10/16/13 08:25

Matrix: Solid

Date Received: 10/16/13 17:10

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	**36**		1.8		mg/Kg		11/12/13 09:45	11/13/13 01:41	4
Lead	**10**		1.8		mg/Kg		11/12/13 09:45	11/13/13 01:41	4
Barium	**140**		1.8		mg/Kg		11/12/13 09:45	11/13/13 01:41	4
Arsenic	**5.9**		3.6		mg/Kg		11/12/13 09:45	11/13/13 01:41	4

QC Sample Results

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 720-148154/1-A
Matrix: Solid
Analysis Batch: 148221

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 148154

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.50		mg/Kg		11/12/13 09:45	11/13/13 00:09	1
Lead	ND		0.50		mg/Kg		11/12/13 09:45	11/13/13 00:09	1
Barium	ND		0.50		mg/Kg		11/12/13 09:45	11/13/13 00:09	1
Arsenic	ND		1.0		mg/Kg		11/12/13 09:45	11/13/13 00:09	1

Lab Sample ID: LCS 720-148154/2-A
Matrix: Solid
Analysis Batch: 148221

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 148154

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	50.0	49.4		mg/Kg		99	80 - 120
Lead	50.0	49.7		mg/Kg		99	80 - 120
Barium	50.0	50.5		mg/Kg		101	80 - 120
Arsenic	50.0	48.0		mg/Kg		96	80 - 120

Lab Sample ID: LCSD 720-148154/3-A
Matrix: Solid
Analysis Batch: 148221

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 148154

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	50.0	50.9		mg/Kg		102	80 - 120	3	20
Lead	50.0	51.1		mg/Kg		102	80 - 120	3	20
Barium	50.0	51.9		mg/Kg		104	80 - 120	3	20
Arsenic	50.0	49.4		mg/Kg		99	80 - 120	3	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 720-148172/1-A
Matrix: Solid
Analysis Batch: 148197

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 148172

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.010		mg/Kg		11/12/13 12:51	11/12/13 16:39	1

Lab Sample ID: LCS 720-148172/2-A
Matrix: Solid
Analysis Batch: 148197

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 148172

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.833	0.875		mg/Kg		105	80 - 120

Lab Sample ID: LCSD 720-148172/3-A
Matrix: Solid
Analysis Batch: 148197

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 148172

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.833	0.867		mg/Kg		104	80 - 120	1	20

QC Sample Results

Method: 7471A - Mercury (CVAA) (Continued)

Lab Sample ID: 720-53093-6 MS
Matrix: Solid
Analysis Batch: 148197

Client Sample ID: B-3-2.0
Prep Type: Total/NA
Prep Batch: 148172

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.073		0.694	0.806		mg/Kg		105	75 - 125

Lab Sample ID: 720-53093-6 MSD
Matrix: Solid
Analysis Batch: 148197

Client Sample ID: B-3-2.0
Prep Type: Total/NA
Prep Batch: 148172

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.073		0.769	0.900		mg/Kg		107	75 - 125	11	20

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 500-212558/1-A
Matrix: Solid
Analysis Batch: 212685

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 212558

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		1.0		mg/Kg		11/19/13 11:00	11/19/13 15:56	1

Lab Sample ID: LCS 500-212558/2-A
Matrix: Solid
Analysis Batch: 212685

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 212558

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	10.0	8.80		mg/Kg		88	80 - 120

Lab Sample ID: LCS 500-212558/3-A
Matrix: Solid
Analysis Batch: 212685

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 212558

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	792	811		mg/Kg		102	80 - 120

Metals

Prep Batch: 148154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-20	B-10-2.0	Total/NA	Solid	3050B	
720-53093-22	B-11-2.0	Total/NA	Solid	3050B	
720-53093-24	B-12-2.0	Total/NA	Solid	3050B	
LCS 720-148154/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 720-148154/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
MB 720-148154/1-A	Method Blank	Total/NA	Solid	3050B	

Prep Batch: 148172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-6	B-3-2.0	Total/NA	Solid	7471A	
720-53093-6 MS	B-3-2.0	Total/NA	Solid	7471A	
720-53093-6 MSD	B-3-2.0	Total/NA	Solid	7471A	
LCS 720-148172/2-A	Lab Control Sample	Total/NA	Solid	7471A	
LCSD 720-148172/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	
MB 720-148172/1-A	Method Blank	Total/NA	Solid	7471A	

Analysis Batch: 148197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-6	B-3-2.0	Total/NA	Solid	7471A	148172
720-53093-6 MS	B-3-2.0	Total/NA	Solid	7471A	148172
720-53093-6 MSD	B-3-2.0	Total/NA	Solid	7471A	148172
LCS 720-148172/2-A	Lab Control Sample	Total/NA	Solid	7471A	148172
LCSD 720-148172/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	148172
MB 720-148172/1-A	Method Blank	Total/NA	Solid	7471A	148172

Analysis Batch: 148221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-20	B-10-2.0	Total/NA	Solid	6010B	148154
720-53093-22	B-11-2.0	Total/NA	Solid	6010B	148154
720-53093-24	B-12-2.0	Total/NA	Solid	6010B	148154
LCS 720-148154/2-A	Lab Control Sample	Total/NA	Solid	6010B	148154
LCSD 720-148154/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	148154
MB 720-148154/1-A	Method Blank	Total/NA	Solid	6010B	148154

General Chemistry

Prep Batch: 212558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-23	B-12-1.0	Total/NA	Solid	3060A	
LCS 500-212558/2-A	Lab Control Sample	Total/NA	Solid	3060A	
LCS 500-212558/3-A	Lab Control Sample	Total/NA	Solid	3060A	
MB 500-212558/1-A	Method Blank	Total/NA	Solid	3060A	

Analysis Batch: 212685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-53093-23	B-12-1.0	Total/NA	Solid	7196A	212558
LCS 500-212558/2-A	Lab Control Sample	Total/NA	Solid	7196A	212558
LCS 500-212558/3-A	Lab Control Sample	Total/NA	Solid	7196A	212558
MB 500-212558/1-A	Method Blank	Total/NA	Solid	7196A	212558

Lab Chronicle

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-4

Client Sample ID: B-3-2.0

Lab Sample ID: 720-53093-6

Date Collected: 10/16/13 10:10
Date Received: 10/16/13 17:10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7471A			148172	11/12/13 12:51	JCR	TAL PLS
Total/NA	Analysis	7471A		1	148197	11/12/13 16:51	SLK	TAL PLS

Client Sample ID: B-10-2.0

Lab Sample ID: 720-53093-20

Date Collected: 10/16/13 07:55
Date Received: 10/16/13 17:10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			148154	11/12/13 09:45	JCR	TAL PLS
Total/NA	Analysis	6010B		4	148221	11/13/13 01:32	SLK	TAL PLS

Client Sample ID: B-11-2.0

Lab Sample ID: 720-53093-22

Date Collected: 10/16/13 08:10
Date Received: 10/16/13 17:10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			148154	11/12/13 09:45	JCR	TAL PLS
Total/NA	Analysis	6010B		4	148221	11/13/13 01:36	SLK	TAL PLS

Client Sample ID: B-12-1.0

Lab Sample ID: 720-53093-23

Date Collected: 10/16/13 08:20
Date Received: 10/16/13 17:10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			212558	11/19/13 11:00	JLE	TAL CHI
Total/NA	Analysis	7196A		2	212685		JLE	TAL CHI
					(Start)	11/19/13 15:59		
					(End)	11/19/13 16:00		

Client Sample ID: B-12-2.0

Lab Sample ID: 720-53093-24

Date Collected: 10/16/13 08:25
Date Received: 10/16/13 17:10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			148154	11/12/13 09:45	JCR	TAL PLS
Total/NA	Analysis	6010B		4	148221	11/13/13 01:41	SLK	TAL PLS

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Certification Summary

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-4

Laboratory: TestAmerica Pleasanton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-14

Laboratory: TestAmerica Chicago

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40461	04-30-14
California	NELAP	9	01132CA	04-30-14
Georgia	State Program	4	N/A	04-30-14
Hawaii	State Program	9	N/A	04-30-14
Illinois	NELAP	5	100201	04-30-14
Indiana	State Program	5	C-IL-02	04-30-14
Iowa	State Program	7	82	05-01-14
Kansas	NELAP	7	E-10161	10-31-14 *
Kentucky	State Program	4	90023	12-31-13
Kentucky (UST)	State Program	4	66	04-30-14
Louisiana	NELAP	6	30720	06-30-14
Massachusetts	State Program	1	M-IL035	06-30-14
Mississippi	State Program	4	N/A	04-30-14
North Carolina DENR	State Program	4	291	12-31-13
North Dakota	State Program	8	R-194	04-30-14
Oklahoma	State Program	6	8908	08-31-14
South Carolina	State Program	4	77001	04-30-14
Texas	NELAP	6	T104704252-09-TX	02-28-14
USDA	Federal		P330-12-00038	02-06-15
Wisconsin	State Program	5	999580010	08-31-14
Wyoming	State Program	8	8TMS-Q	04-30-14

* Expired certification is currently pending renewal and is considered valid.

Method Summary

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-4

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL PLS
7471A	Mercury (CVAA)	SW846	TAL PLS
7196A	Chromium, Hexavalent	SW846	TAL CHI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200
TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Sample Summary

Client: Vista Environmental Consulting, Inc
Project/Site: Boston/Hampton Road Sites

TestAmerica Job ID: 720-53093-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-53093-6	B-3-2.0	Solid	10/16/13 10:10	10/16/13 17:10
720-53093-20	B-10-2.0	Solid	10/16/13 07:55	10/16/13 17:10
720-53093-22	B-11-2.0	Solid	10/16/13 08:10	10/16/13 17:10
720-53093-23	B-12-1.0	Solid	10/16/13 08:20	10/16/13 17:10
720-53093-24	B-12-2.0	Solid	10/16/13 08:25	10/16/13 17:10

Sharma, Dimple 720-53093-4

From: Jeff Austin [jeff@vista-env.com]
Sent: Monday, November 11, 2013 3:31 PM
To: Sharma, Dimple
Subject: Fw: Fwd: Updated Table for Hampton/Boston

Dimple,
More requested analyticals for the Boston/Hampton Road site in Hayward. See email below for specific request. please confirm receipt of this email. thank you!!

Jeff Austin
Senior Project Manager
Vista Environmental
cell: (415) 218-0027
email: jeff@vista-env.com

B-12-1.0 for Cr^6

B-10-2.0 for As, Pb
B-11-2.0 for As, Pb
B-12-2.0 for As, Pb, Ba, Cr

I'm not adverse to running the full RCRA 8 metal scan on the 3 2.0' samples if you think there is any value to that. I believe we are already having B-10-2.0 and B-12-2.0 run for pesticides.

Rod Freitag, Environmental Program Manager

Alameda County General Services Agency, TSD
1401 Lakeside Drive, Rm. 1115, Oakland, CA 94612
Ph (510) 208-9522 | Fax (510) 208-9530 | QIC 26023

Please consider the environment before printing this email.

From: Chuck Bove [mailto:chuckbove@vista-env.com]
Sent: Thursday, November 07, 2013 2:42 PM
To: Freitag, Rod, GSA-Technical Services Department
Subject: FW: Updated Table for Hampton/Boston

720-53093 Chain of Custody

Rod:

Attached please find the updated Hampton/Boston table. Please let me know if you have any questions.

Best Regards
Chuck

Login Sample Receipt Checklist

Client: Vista Environmental Consulting, Inc

Job Number: 720-53093-4

Login Number: 53093

List Source: TestAmerica Pleasanton

List Number: 1

Creator: Mullen, Joan

Question	**Answer**	**Comment**
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Vista Environmental Consulting, Inc

Job Number: 720-53093-4

Login Number: 53093
List Number: 1
Creator: Kelsey, Shawn M

List Source: TestAmerica Chicago
List Creation: 10/18/13 11:16 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Vista Environmental Consultants
Chris Burns
2984 Teagarden St.

San Leandro, CA 94577

Client ID: L1161
Report Number: B182971
Date Received: 10/10/13
Date Analyzed: 10/11/13
Date Printed: 10/11/13
First Reported: 10/11/13

Job ID/Site: 1306230 - County of Alameda GSA, 278 Hampton Road, Hayward

Date(s) Collected: 10/10/2013

FALI Job ID: L1161
Total Samples Submitted: 10
Total Samples Analyzed: 10

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
278-131010-HA01-01	11436742						
Layer: Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
278-131010-HA01-02	11436743						
Layer: Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
278-131010-HA01-03	11436744						
Layer: Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
278-131010-HA01-04	11436745						
Layer: Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
278-131010-HA01-05	11436746						
Layer: Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
278-131010-HA01-06	11436747						
Layer: Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
278-131010-HA01-07	11436748						
Layer: Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
278-131010-HA01-08	11436749						
Layer: Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
278-131010-HA01-09	11436750						
Layer: Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
278-131010-HA01-10	11436751						
Layer: Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

Tad Thrower

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

Forensic Analytical Laboratories, Inc.

Analysis Request Form (COC)

Client Name & Address:
Vista Environmental Consulting, Inc.
2984 Teagarden Street
San Leandro, CA 94577

PO / Job#: 1306230
Date: 10/10/13

Turn Around Time: Same Day / 1Day / [✓ 2Day] / 3Day / 4Day / 5Day

☐ PCM: ☐ NIOSH 7400A / ☐ NIOSH 7400B ☐ Rotometer

☒ PLM: ☒ Standard / ☐ Point Count 400 / 1000 / ☐ CARB 435

☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402
☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield
☐ TEM Water: ☐ Potable / ☐ Non-Potable / ☐ Weight %
☐ TEM Microvac: ☐ Qual(+/-) / ☐ D5755(str/area) / ☐ D5756(str/mass)

☐ IAQ Particle Identification (PLM LAB) ☐ PLM Opaques/Soot
☐ Particle Identification (TEM LAB) ☐ Special Project

☐ Metals Analysis: Method:
Matrix:
Analytes:

Contact: Chris Burns

Phone: (510) 346-8860
Fax: (888) 296-0271

E-mail: chrisburns@vista-env.com & molli@vista-env.com

Site: County of Alameda GSA

Site Location: 278 Hampton Road, Hayward

Comments:

Report Via: ☐ Fax ☒ E-Mail ☐ Verbal

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg. LPM	Total Time	
278-131010-HA01-01	10/10/13	Soil - North Pad, South Side	A P C				
278-131010-HA01-02	10/10/13	Soil - North Pad, East Side	A P C				
278-131010-HA01-03	10/10/13	Soil - North Pad, North Side	A P C				
278-131010-HA01-04	10/10/13	Soil - North Pad, West Side	A P C				
278-131010-HA01-05	10/10/13	Soil - South Pad, South Side	A P C				
278-131010-HA01-06	10/10/13	Soil - South Pad, East Side	A P C				
278-131010-HA01-07	10/10/13	Soil - South Pad, North Side	A P C				
278-131010-HA01-08	10/10/13	Soil - East Debris Pile, South	A P C				
278-131010-HA01-09	10/10/13	Soil - East Debris Pile, Middle	A P C				
278-131010-HA01-10	10/10/13	Soil - East Debris Pile, North	A P C				

Sampled By: Chris Burns Date: 10/10/13 Time: 0800

Shipped Via: ☐ Fed Ex ☐ DHL ☐ UPS ☐ US Mail ☐ Courier ☒ Drop Off ☐ Other:

Relinquished By: Date / Time: 10/10/13 @ 2:38	Relinquished By: Date / Time:	Relinquished By: Date / Time:
Received By: d/o Date / Time: 10/10/13 2:45pm Condition Acceptable? ☑ Yes ☐ No	Received By: Date / Time: Condition Acceptable? ☐ Yes ☐ No	Received By: Date / Time: Condition Acceptable? ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Vista Environmental Consultants
Chris Burns
2984 Teagarden St.

San Leandro, CA 94577

Client ID: L1161
Report Number: B183165
Date Received: 10/16/13
Date Analyzed: 10/18/13
Date Printed: 10/18/13
First Reported: 10/18/13

Job ID/Site: 1306225 - Cherryland Community Center, 17482 Boston Rd., Hayward, CA

Date(s) Collected: 10/16/2013

FALI Job ID: L1161
Total Samples Submitted: 4
Total Samples Analyzed: 4

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17482-101613-HA01-01	11438977						
Layer: Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17482-101613-HA01-02	11438978						
Layer: Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17482-101613-HA01-03	11438979						
Layer: Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17482-101613-HA01-04	11438980						
Layer: Brown Soil			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

Tad Thrower

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

Forensic Analytical Laboratories, Inc.

Analysis Request Form (COC)

Client Name & Address:
Vista Environmental Consulting, Inc.
2984 Teagarden Street
San Leandro, CA 94577

PO / Job#: 1306225
Date: 10/16/13

Turn Around Time: Same Day / 1Day / [✓ 2Day] / 3Day / 4Day / 5Day

☐ PCM: ☐ NIOSH 7400A / ☐ NIOSH 7400B ☐ Rotometer

☒ PLM: ☒ Standard / ☐ Point Count 400 / 1000 / ☐ CARB 435

☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402
☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield
☐ TEM Water: ☐ Potable / ☐ Non-Potable / ☐ Weight %
☐ TEM Microvac: ☐ Qual(+/-) / ☐ D5755(str/area) / ☐ D5756(str/mass)

☐ IAQ Particle Identification (PLM LAB) ☐ PLM Opaques/Soot
☐ Particle Identification (TEM LAB) ☐ Special Project

☐ Metals Analysis: Method:
Matrix:
Analytes:

Contact: Chris Burns

Phone: (510) 346-8860
Fax: (888) 296-0271

E-mail: chrisburns@vista-env.com & molli@vista-env.com

Site: Cherryland Community Center

Site Location: 17482 Boston Rd., Hayward, CA

Comments:

Report Via: ☐ Fax ☒ E-Mail ☐ Verbal

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY Type	Time On/Off	Avg. LPM	Total Time	Sample Area / Air Volume
17482-101613-HA01-01	10/16/13	EXT COMPOSITE SAMPLE UNDERNEATH DRIPLINE (WEST)	A P C				|
17482-101613-HA01-02		EXT COMPOSITE SAMPLE UNDER DRIPLINE (SOUTH)	A P C				|
17482-101613-HA01-03		EXT COMPOSITE SAMPLE UNDER DRIPLINE (EAST)	A P C				|
17482-101613-HA01-04		EXT COMPOSITE SAMPLE UNDER DRIPLINE (NORTH)	A P C				|
			A P C				
	4	SAMPLES	A P C				
			A P C				
			A P C				
			A P C				
			A P C				

Sampled By: LUIS J. ROCHA Date: 10/16/13 Time: 9:30

Shipped Via: ☐ Fed Ex ☐ DHL ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished By: Rocha	Relinquished By:	Relinquished By:
Date / Time:	Date / Time:	Date / Time:
Received By:	Received By:	Received By:
Date / Time: 10-16-13 @ 11:25am	Date / Time:	Date / Time:
Condition Acceptable? ☒ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No

San Francisco Office: 3777 Depot Road, Suite 409, Hayward, California 94545-2761 / Ph: (510)887-8828 * (800)827-3274 / Fax: (510)887-4218
Los Angeles Office: 2959 Pacific Commerce Drive, Rancho Dominguez, California 90221 / Ph: (310)763-2374 * (888)813-9417 / Fax: (310)763-4450
Las Vegas Office: 6765 S. Eastern Avenue, Suite 3, Las Vegas, Nevada 89119 / Ph: (702)784-0040 / Fax: (702)784-0030

Metals Analysis of Soils

Vista Environmental Consultants
Project Manager
2984 Teagarden St.

San Leandro, CA 94577

Client ID: L1161
Report Number: M143664
Date Received: 10/10/13
Date Analyzed: 10/14/13
Date Printed: 10/14/13
First Reported: 10/14/13

Job ID / Site: 1306230, County of Alameda GSA, 278 Hampton Road, Hayward
Date(s) Collected: 10/10/13

FALI Job ID: L1161
Total Samples Submitted: 10
Total Samples Analyzed: 10

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
278-131010-HA02-01	30661603	Pb	490	mg/kg	40	EPA 3050B/7420
278-131010-HA02-02	30661604	Pb	350	mg/kg	30	EPA 3050B/7420
278-131010-HA02-03	30661605	Pb	210	mg/kg	20	EPA 3050B/7420
278-131010-HA02-04	30661606	Pb	710	mg/kg	40	EPA 3050B/7420
278-131010-HA02-05	30661607	Pb	1500	mg/kg	60	EPA 3050B/7420
278-131010-HA02-06	30661608	Pb	1800	mg/kg	200	EPA 3050B/7420
278-131010-HA02-07	30661609	Pb	1100	mg/kg	70	EPA 3050B/7420
278-131010-HA02-08	30661610	Pb	330	mg/kg	20	EPA 3050B/7420
278-131010-HA02-09	30661611	Pb	270	mg/kg	20	EPA 3050B/7420
278-131010-HA02-10	30661612	Pb	1100	mg/kg	70	EPA 3050B/7420

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.

Daniele Siu

Daniele Siu, Laboratory Supervisor, Hayward Laboratory

Forensic Analytical Laboratories, Inc.

Analysis Request Form (COC)

Client Name & Address:
Vista Environmental Consulting, Inc.
2984 Teagarden Street
San Leandro, CA 94577

PO / Job#: 1306230
Date: 10/10/13

Turn Around Time: Same Day / 1Day / [✓ 2Day] / 3Day / 4Day / 5Day

☐ PCM: ☐ NIOSH 7400A / ☐ NIOSH 7400B ☐ Rotometer

☐ PLM: ☐ Standard / ☐ Point Count 400 - 1000 / ☐ CARB 435

Contact: Chris Burns

Phone: (510) 346-8860
Fax: (888) 296-0271

E-mail: chrisburns@vista-env.com & molli@vista-env.com

☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402
☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield
☐ TEM Water: ☐ Potable / ☐ Non-Potable / ☐ Weight %
☐ TEM Microvac: ☐ Qual(+/-) / ☐ D5755(str/area) / ☐ D5756(str/mass)

☐ IAQ Particle Identification (PLM LAB) ☐ PLM Opaques/Soot
☐ Particle Identification (TEM LAB) ☐ Special Project

☒ Metals Analysis: Method: Flame AA
Matrix: Soil
Analytes: Pb

Site: County of Alameda GSA

Site Location: 278 Hampton Road, Hayward

Comments:

Report Via: ☐ Fax ☒ E-Mail ☐ Verbal

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY Type	Time On/Off	Avg. LPM	Total Time	Sample Area / Air Volume
278-131010-HA02-01	10/10/13	Soil - North Pad, South Side	A P C				
278-131010-HA02-02	10/10/13	Soil - North Pad, East Side	A P C				
278-131010-HA02-03	10/10/13	Soil - North Pad, North Side	A P C				
278-131010-HA02-04	10/10/13	Soil - North Pad, West Side	A P C				
278-131010-HA02-05	10/10/13	Soil - South Pad, South Side	A P C				
278-131010-HA02-06	10/10/13	Soil - South Pad, East Side	A P C				
278-131010-HA02-07	10/10/13	Soil - South Pad, North Side	A P C				
278-131010-HA02-08	10/10/13	Soil - East Debris Pile, South	A P C				
278-131010-HA02-09	10/10/13	Soil - East Debris Pile, Middle	A P C				
278-131010-HA02-10	10/10/13	Soil - East Debris Pile, North	A P C				

Sampled By: Chris Burns Date: 10/10/13 Time: 0800

Shipped Via: ~~☐ Fed Ex~~ ☐ DHL ☐ UPS ☐ US Mail ☐ Courier ☒ Drop Off ☐ Other:

Relinquished By: Date / Time: 10-10-13 2:30	Relinquished By: Date / Time:	Relinquished By: Date / Time:
Received By: d/o Date / Time: 10/10/13 2:45pm Condition Acceptable? ☑ Yes ☐ No	Received By: Date / Time: Condition Acceptable? ☐ Yes ☐ No	Received By: Date / Time: Condition Acceptable? ☐ Yes ☐ No

San Francisco Office: 3777 Depot Road, Suite 409, Hayward, California 94545-2761 / Ph: (510)887 8828 * (800)827-3274 / Fax: (510)887-4218
Los Angeles Office: 2959 Pacific Commerce Drive, Rancho Dominguez, California 90221 / Ph: (310)763-2374 * (888)813 9417 / Fax: (310)763-4450
Las Vegas Office: 6765 S. Eastern Avenue, Suite 3, Las Vegas, Nevada 89119 / Ph: (702)784-0040 / Fax: (702)784-0030

Final Report

Forensic Analytical Laboratories

Metals Analysis of Soils

Vista Environmental Consultants
Project Manager
2984 Teagarden St.

San Leandro, CA 94577

Client ID: L1161
Report Number: M143830
Date Received: 10/16/13
Date Analyzed: 10/18/13
Date Printed: 10/18/13
First Reported: 10/18/13

Job ID / Site: 1306225, Cherryland Community Center, 17482 Boston Rd., Hayward, Ca
Date(s) Collected: 10/6/13

FALI Job ID: L1161
Total Samples Submitted: 4
Total Samples Analyzed: 4

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
17482-101613-HA02-01	30662072	Pb	200	mg/kg	20	EPA 3050B/7420
17482-101613-HA02-02	30662073	Pb	1800	mg/kg	200	EPA 3050B/7420
17482-101613-HA02-03	30662074	Pb	370	mg/kg	20	EPA 3050B/7420
17482-101613-HA02-04	30662075	Pb	70	mg/kg	6	EPA 3050B/7420

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.

Daniele Siu

Daniele Siu, Laboratory Supervisor, Hayward Laboratory

Forensic Analytical Laboratories, Inc.

Analysis Request Form (COC)

Client Name & Address:
Vista Environmental Consulting, Inc.
2984 Teagarden Street
San Leandro, CA 94577

PO / Job#: 1306225
Date: 10/16/13

Turn Around Time: Same Day / 1Day / [✓ 2Day] / 3Day / 4Day / 5Day

☐ PCM: ☐ NIOSH 7400A / ☐ NIOSH 7400B ☐ Rotometer

☐ PLM: ☐ Standard / ☐ Point Count 400 - 1000 / ☐ CARB 435

☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402
☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield
☐ TEM Water: ☐ Potable / ☐ Non-Potable / ☐ Weight %
☐ TEM Microvac: ☐ Qual(+/-) / ☐ D5755(str/area) / ☐ D5756(str/mass)

☐ IAQ Particle Identification (PLM LAB) ☐ PLM Opaques/Soot
☐ Particle Identification (TEM LAB) ☐ Special Project

☒ Metals Analysis: Method: FLAME AA
Matrix: SOIL
Analytes: LEAD

Contact: Chris Burns

Phone: (510) 346-8860 Fax: (888) 296-0271

E-mail: chrisburns@vista-env.com & molli@vista-env.com

Site: Cherryland Community Center

Site Location: 17482 Boston Rd., Hayward, CA

Comments:

Report Via: ☐ Fax ☒ E-Mail ☐ Verbal

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg. LPM	Total Time	
17482-101613-HA02-01	10/16/13	EXT COMPOSITE SAMPLE UNDER DRIPLINE (WEST)	A P C				/
17482-101613-HA02-02		EXT COMPOSITE SAMPLE UNDER DRIP LINE (SOUTH)	A P C				/
17482-101613-HA02-03		EXT COMPOSITE SAMPLE UNDER DRIP LINE (EAST)	A P C				/
17482-101613-HA02-04	↓	EXT COMPOSITE SAMPLE UNDER DRIP LINE (NORTH)	A P C				/
			A P C				
		4 SAMPLES	A P C				
			A P C				
			A P C				
			A P C				
			A P C				

Sampled By: LUIS J. ROCHA Date: 10/16/13 Time: 10:00

Shipped Via: ☐ Fed Ex ☐ DHL ☐ UPS ☐ US Mail ☐ Courier ☐ Drop Off ☐ Other:

Relinquished By: Luis J Rocha	Relinquished By:	Relinquished By:
Date / Time:	Date / Time:	Date / Time:
Received By:	Received By:	Received By:
Date / Time: 10-16-13 @ 11:25a	Date / Time:	Date / Time:
Condition Acceptable? ☒ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No

VISTA ENVIRONMENTAL
CONSULTING

HAZARDOUS MATERIAL SURVEY REPORT
CHERRYLAND COMMUNITY CENTER PROJECT
17482 BOSTON ROAD & 278 HAMPTON ROAD, HAYWARD, CALIFORNIA

PREPARED FOR:

General Services Agency of Alameda County- TSD
1401 Lakeside Drive
Oakland, CA 94612

PREPARED BY:
Vista Environmental Consulting, Inc.
2984 Teagarden Street
San Leandro, CA 94577

September 12, 2013

Project No. 1306225

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 *Purpose and Objective*

The purpose of this survey was to identify hazardous building materials that will be impacted by upcoming demolition activities for the Cherryland Community Center Project located at 17482 Boston Road and 278 Hampton Road, Hayward, CA. The data provided in this report can assist all parties involved in this project to make informed decisions with regard to regulatory compliance and the health and safety of their employees. This survey included the following:

- Visible and accessible suspect asbestos-containing construction materials (ACCM) were assessed and sampled to determine asbestos content.
- Representative painted and coated building components were assessed and sampled for lead content.
- Visible and accessible materials commonly found in buildings which potentially have hazardous properties that are regulated were assessed, but not sampled. These materials include, but are not limited to:
    - Universal Waste (UW) materials, such as non-incandescent lamps, batteries, and mercury-containing devices;
    - Polychlorinated biphenyls (PCBs) containing devices such as lamp ballasts;
    - Low-level radioactive sourced devices such as smoke detector;

1.2 *Team Members/Survey Dates*

VEC performed the hazardous materials survey on August 24, 2013. The asbestos survey was performed by Christopher Burns a State of California Division of Occupational Safety and Health (Cal/OSHA) Certified Asbestos Consultant (#92-0224) and assisted by Javier Rocha, a Cal/OSHA Certified Site Surveillance Technician (#02-3244). The lead paint sampling was performed by Christopher Burns, who has a Lead-Related Construction Certificate (#I-663) as an Inspector/Assessor issued by the State of California Department of Public Health (CDPH) and assisted by Javier Rocha, a CDPH Certified Lead Sampling Technician (#19869).

1.3 *Building Descriptions*

17482 Boston Road

This building is an approximately 3,200 square foot, two story house built in 1946 and renovated at unknown dates. The building has wood framing, subflooring and exterior walls, and an asphalt shingle and composite roof. The garage and east section sit on a concrete foundation. Interior finishes include, but are not limited to, wallboard and joint compound with texture coating walls and ceilings, hardwood and ceramic tile floors.

278 Hampton Road

The site consists of an asphalt driveway and concrete foundations of a former dwelling and barn. Previous site structures consisted of a residence, garage, shop, and two barn-like structures. These were not present at the time of this survey.

2.0 FINDINGS

2.1 *Asbestos-Containing Homogeneous Areas*

17482 Boston Road

The results of the bulk samples collected for asbestos, and analyzed by Polarized Light Microscopy (PLM), indicate that detectable concentrations of asbestos are present in the following materials:

Homogeneous Area	Material Description	Material Location	Quantity
HA 01	Wallboard, White/Joint Compound, White with Texture Coat	Throughout Except Garage, Walls and Ceilings (Debris in Bathroom 4 & 5, Bedroom 6, and adjacent Hallway)	11,000 SF
HA 02	Texture Coat, White, Small	Throughout on HA01 Except Garage, Walls and Ceilings (Debris in Bathroom 4 & 5, Bedroom 6, and adjacent Hallway)	11,000 SF
HA 06	Mastic, Black, Sink, Undercoating	Kitchen	10 SF
HA 08	Wallboard, White/Joint Compound, White, with Texture Coat	Garage - Walls & Ceiling	2,000 SF
HA 09	Texture Coat, White, Large	Garage - Walls & Ceiling	2,000 SF
HA 10	Insulation, Gray, Duct	Heater Closet and Attic Space on Duct and Registers	75 SF

Homogeneous Area	Material Description	Material Location	Quantity
HA13	Tape, White, Duct Seam	Attic, Wall Void and Crawlspace on Duct Seams	50 SF
HA 14	Vinyl Sheet Flooring, Beige, Pebble Pattern, Remnants/Backing	1st Floor East Closet on Rolls on Ground	60 SF
HA 27	Mastic, Gray, Black/Silver Roof	Roof - Patches, Penetrations & Seams	40 SF
HA 30	Sealant, White, Exterior Wall Seams	Exterior - Walls around Garage & Second Floor	3 SF (36 LF)
HA 48	Mastic, Black, Exterior Seam	Exterior South East Where Garage Attaches to House	3 SF

Assumed asbestos-containing materials that were not sampled during this survey are as follows:

Homogeneous Area	Material Description	Material Location	Quantity
HA 15	Vinyl Floor Tile, 9" Green, Flexachrome, in Box	Kitchen Counter	5 SF

<u>278 Hampton Road</u>

No asbestos was detected in the 4 samples collected and analyzed. Mounded soil and apparent demolition debris surround the concrete foundations at the central portion of the site and may occur throughout the site. These materials may contain asbestos and should be sampled prior to disturbance.

Historically utility companies in the Bay Area used asbestos-containing cement piping for water supply. This type of subsurface piping may be present throughout the Project Site.

2.2 *Non-Asbestos Homogeneous Areas*

<u>17482 Boston Road</u>

The results of the bulk samples collected for asbestos, and analyzed by PLM, indicate that detectable concentrations of asbestos ***<u>are not present</u>*** in the following materials:

Homogeneous Area	Material Description	Material Location
HA 03	Insulation, Black & Brown, Wire	Throughout
HA 04	Acoustic Ceiling Tile, 12" White, Non-uniform Hole/Mastic	Bedroom 1
HA 05	Vapor Paper, Brown, Under Hardwood Floor	Living Room & Kitchen
HA 07	Mortar, White/Firebrick, Beige	Family Room - Fireplace
HA 11	Vapor Paper, Black, Wall	Throughout Perimeter Walls
HA 12	Insulation, Gray, Blown-In Attic	Attic
HA 16	Mortar, White/Backing Board, Gray, Floor	Kitchen, Bathroom 1 & 2
HA 17	Mastic, Yellow, Ceramic Floor	Hallway - Entry
HA 18	Mortar, White/Grout, Red, on Wood	Dining Room & Family Room

Homogeneous Area	Material Description	Material Location
HA 19	Leveling Compound, White	Bedroom 3
HA 20	Vapor Paper, Black, Floor	Hallway
HA 21	Mortar, White/Backing Board, Gray, 12" Ceramic Floor	Bathroom 4 & 5
HA 22	Paint, Beige, Exterior	Exterior
HA 23	Putty, White, Window	Windows
HA 24	Roofing, Black, Shingle	Roof
HA 25	Mastic, Brown, Baseboard	Bathroom 3
HA 26	Roofing, Black Sheet	Roof - South Central
HA 28	Sealant, Beige, Flashing	Roof - South Central
HA 29	Sealant, White, Window Frame, Wall Seams	Exterior Window Frames and Wall Seams
HA 31	Sealant, Off-White, Door Frame	Exterior of Garage - Door Frame
HA 49	Sealant, Tan, Exterior Patch	Exterior of House - North
HA 50	Concrete, Gray	Exterior Driveway & Walkway
HA 51	Roofing, Black & Green, Shingle	Attic - East

278 Hampton Road

The results of the bulk samples collected for asbestos, and analyzed by PLM, indicate that detectable concentrations of asbestos ***are not present*** in the following materials:

Homogeneous Area	Material Description	Material Location
HA 01	Paint, White/Concrete, Gray	North Concrete Pad
HA 02	Concrete, Gray	South Concrete Pad
HA 03	Asphalt, Black	Driveway

2.3 *Lead Paint Sampling Results*

17482 Boston Road

The bulk sample results for this survey indicate that the following painted surfaces had lead concentrations above the analytical detection level:

Homogeneous Area	Material Description	Material Location	Lab Result	Quantity
HA 32	Paint, Beige, Drywall	Interior Walls	0.031 wt%	NA
HA 33	Paint, Green, Drywall	Interior Walls	0.006 wt%	NA
HA 34	Paint, White, Drywall	Interior Walls & Ceiling	0.008 wt%	NA
HA 35	Paint, White, Wood	Interior Baseboards	0.079 wt%	NA
HA 37	Beige, 15" Ceramic Floor	Entry, Dining Room, Closet, Family Room, Bathroom 1 & 2,	7 mg/kg	NA
HA 38	Beige, Pattern, 15" Ceramic Floor	Kitchen & Laundry	25 mg/kg	NA
HA 40	**Paint, White, Wood**	**Exterior - Door & Door Frame**	**0.85 wt%**	**55 SF**

Homogeneous Area	Material Description	Material Location	Lab Result	Quantity
HA 41	Paint, Beige, Wood	Exterior - Walls & Trim	0.49 wt%	NA
HA 42	**Paint, Beige, Wood**	**Exterior - Windows**	**1.9 wt%**	**175 SF**
HA 43	Paint, White, Wood	Exterior - Window Frame	0.11 wt %	NA
HA 44	Paint, White, Wood	Exterior of Garage Door and Door Frames	0.009 wt %	NA

278 Hampton Road

The bulk sample results for this survey indicate that the following painted surfaces had lead concentrations above the analytical detection level:

Homogeneous Area	Material Description	Material Location	Lab Result	Quantity
HA 04	Paint, White	North Concrete Pad	0.018 wt%	NA

Bold = Paint containing greater than 5,000 ppm of lead or 0.5% lead by weight.

Mounded soil and apparent demolition debris surround the concrete foundations at the central portion of the site and may occur throughout the site. These materials may contain lead and should be sampled prior to disturbance.

Analytical results for other lead samples collected were below the analytical detection level.

2.4 *Other Hazardous Materials*

17482 Boston Road

Devices with potential hazardous materials were visually identified at the Project Site. They are as follows:

Material	Contaminant	Quantity (EA)
Fluorescent Tubes (4' Length)	Universal Waste	12
Light Fixture Ballasts	Polychlorinated Biphenyls	6

278 Hampton Road

No other suspect hazardous materials were identified.

3.0 SURVEY PROTOCOLS

3.1 *Field/Analytical Protocol*

3.1.1 Asbestos

The asbestos survey was performed generally in accordance with the AHERA protocol (40 CFR Part 763, Subpart E). Visual identification was performed by assessing visible and accessible structural, architectural, and mechanical components for the presence of suspect ACCM at the Project Site. Destructive sampling techniques were employed where appropriate.

This limited ACCM survey was conducted in the following manner:

- Suspect ACCM was categorized into homogeneous materials. A homogeneous material is defined as a surfacing material, thermal system insulation, or miscellaneous material which is uniform in color and texture. It may also be additionally subcategorized using the date of installation, when available.
- A sampling scheme was developed based upon the location and quantity of the suspect homogeneous ACCM. A rough order of magnitude estimate of each suspect homogenous ACCM was calculated and recorded for future reference. A sampling scheme, including a specific number of samples per suspect homogeneous ACCM, was calculated prior to sampling.
- Sampling guidelines established by the United States Environmental Protection Agency (USEPA) were utilized for sampling each suspected homogeneous ACCM. Methods described in Appendix K of 8 California Code of Regulation (CCR) 1529 were utilized in the collection of each suspect homogeneous ACCM sample.
- Trained California asbestos certified personnel, using appropriate sampling tools and sterile leak-tight Whirl-pak® containers, collected building materials that were suspected to contain ACCM.
- Each suspect ACCM sample was collected and sealed in its container and appropriately labeled with a unique sample identification number and recorded on an asbestos bulk sampling log. Each log contains a chain-of-custody to assure the proper transition of the samples from VEC to the analytical laboratory.
- Sampling tools were decontaminated between the collection of each suspect sample to prevent the possibility of cross contamination to subsequent suspect ACCM samples.

The suspect ACCM samples were delivered, under proper chain-of-custody protocol, to Forensic Analytical Laboratories (FAL) in Hayward, California. FAL is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP) and the California Environmental Laboratory Accreditation Program (Cal-ELAP). The samples were submitted for analysis by Polarized Light Microscopy (PLM) utilizing dispersion staining techniques in accordance with the EPA's "Method for the Determination of Asbestos in Bulk Building Materials" U.S. EPA/600/R-93/116, Visual Area Estimate, dated July 1993 and adopted by the NVLAP as Test Method Code 18/A01.

3.1.2 Lead Paint

This survey included a limited screening of paint and ceramic tile finishes for the purpose of characterizing the lead content in paint and coatings likely to be disturbed during demolition activities. Trained California lead certified personnel, using appropriate sampling tools and sterile leak-tight Whirl-pak® containers, collected painted finishes and ceramic tiles that were suspected to contain lead. Each sample container was labeled with unique sample identification. Sampling tools were decontaminated between the collection of each suspect sample to prevent the possibility of cross contamination.

The paint chip and ceramic tile samples were delivered, under proper chain-of-custody protocol, to FAL in Hayward, California. FAL is accredited under American Industrial Hygiene Association (AIHA), the Environmental Lead Laboratory Accreditation Program (ELLAP), and the California Department of Public Health Services (CDPH) for multiple metals analysis. The samples were prepared and analyzed by method EPA 3050B/7420, Flame Atomic Absorption.

3.1.3 Other Hazardous Materials

Devices with other potential hazardous materials were visually identified during the survey walk through and their quantities were estimated and recorded. No attempt was made to disassemble devices or sample suspect materials within the devices.

3.2 Limitations

VEC's intent was to perform a thorough survey based on industry standards and make a good faith effort to access all building materials down to the structural components and/or interstitial spaces. Sub-surface areas were not included as part of this survey, hence no excavation was conducted to discover buried insulated piping and/or asbestos cement utility piping concealed below the surface. Materials encountered in the buildings/site that are not part of this report must be properly sampled for the content of asbestos or assumed to be asbestos containing prior to any disturbance.

The lead survey was to screen for lead levels and provide results which are generally representative of typical conditions but are not inclusive of all painted/coated surfaces present at this site or the impacted areas. This survey was not a surface by surface inspection as outlined in the U.S. Department of Housing and Urban Development (HUD) *Guidelines For the Evaluation and Control of Lead-Based Paint Hazards in Housing* pursuant to Title X of the Housing and Community Development Act of 1992. The analytical data can be helpful in evaluation of lead-related environmental risks in general. However, the data cannot be used to calculate worker exposures and is not a substitute for employee exposure monitoring or waste stream sampling.

VEC's limited visual survey indicated that light fixtures with ballasts that may contain PCB oil are present. VEC recommends that all ballasts be visually inspected, prior to disposal, to determine if they contain PCB's. Those ballasts marked No PCB's or PCB Free can be considered as such as should be treated as UW - electronic waste. All PCB-containing devices, including, but not limited to ballasts, should be removed or have the oils removed and properly handled, collected, stored, transported and recycled or disposed of by an approved recycling or disposal facility in accordance with the requirements of Title 22 CCR 67426.1.

Findings, conclusions, recommendations and analytical data offered in this report have been derived from reviewing existing information provided by the client, visual assessment of the building materials and systems, and the outcome of sampling and analysis of suspect ACM and suspect lead containing materials.

Quantities and locations are based upon areas that were accessed. Materials similar to those in this report may be present in areas which were not accessed. Because of this, VEC recommends including line item pricing, allowances, and/or additive/deductive wording to bid sheets for unforeseen conditions.

All material quantities reported herein are rough order of magnitude estimates and should not be used for bidding purposes. All contractors are responsible for accurately determining quantities and locations of materials identified in this report.

Respectfully Submitted,
Vista Environmental Consulting

Reviewed and Approved

Christopher R. Burns
Senior Project Manager
CAC #92-0224
CDPH #663

Charles R. Bove
Principal
CAC #92-0160

APPENDIX A - Bulk Sample Analytical Results

BULK SAMPLE RESULTS
General Services Agency of Alameda County, TSD
Cherryland Community Center Project
17482 Boston Road, Hayward, CA 94541

ASBESTOS

Homogeneous Area/Sample Number	Material Description	Sample Location	Lab Result	Quantity
HA 01	Wallboard, White/Joint Compound, White with Texture Coat	---	---	11,000 SF
17482-130824-HA01-01		Laundry Room	Wallboard = ND, Joint Compound = 2% Chrysotile	
17482-130824-HA01-02		Bedroom 1	Wallboard = ND, Joint Compound = 2% Chrysotile	
17482-130824-HA01-03		Heater Closet	Wallboard = ND, Joint Compound = 2% Chrysotile	
HA 02	Texture Coat, White, Small	---	---	11,000 SF
17482-130824-HA02-01		Living Room	Paint = ND, Texture Coat = 2 % Chrysotile	
17482-130824-HA02-02		1st Floor South East Closet	Paint = ND, Texture Coat = 2 % Chrysotile	
17482-130824-HA02-03		Bedroom 2 Closet	Paint = ND, Texture Coat = 2 % Chrysotile	
17482-130824-HA02-04		Bedroom 2	Paint = ND, Texture Coat = 2 % Chrysotile	
17482-130824-HA02-05		Bedroom 5	Paint = ND, Texture Coat = 2 % Chrysotile	
17482-130824-HA02-06		Bedroom 6	Paint = ND, Texture Coat = 2 % Chrysotile	
17482-130824-HA02-07		Bathroom 4	Paint = ND, Texture Coat = 2 % Chrysotile	
HA 03	Insulation, Black & Brown, Wire	---	---	---
17482-130824-HA03-01		Kitchen	ND	
17482-130824-HA03-02		Hallway	ND	
HA 04	Acoustic Ceiling Tile, 12" White, Non-uniform Hole/Mastic	---	---	---
17482-130824-HA04-01		Bedroom 1	ND	
17482-130824-HA04-02		Bedroom 1	ND	
HA 05	Vapor Paper, Brown, Under Hardwood Floor	---	---	---
17482-130824-HA05-01		Living Room	ND	
17482-130824-HA05-02		Kitchen	ND	
HA 06	Mastic, Black, Sink, Undercoating	---		10 SF
17482-130824-HA06-01		Kitchen	2% Chrysotile	
HA 07	Mortar, White/Firebrick, Beige	---	---	---
17482-130824-HA07-01		Family Room - Fireplace	ND	
17482-130824-HA07-02		Family Room - Fireplace	ND	

BULK SAMPLE RESULTS
General Services Agency of Alameda County, TSD
Cherryland Community Center Project
17482 Boston Road, Hayward, CA 94541

Homogeneous Area/Sample Number	Material Description	Sample Location	Lab Result	Quantity
HA 08	Wallboard, White/Joint Compound, White, with Texture Coat	---		2,000 SF
17482-130824-HA08-01		Garage	Wallboard = ND, Joint Compound = 2% Chrysotile	
HA 09	Texture Coat, White, Large	---		2,000 SF
17482-130824-HA09-01		Garage - North West	ND	
17482-130824-HA09-02		Garage - North East	Paint = ND, Texture Coat = 2 % Chrysotile	
17482-130824-HA09-03		Garage - South West	Paint = ND, Texture Coat = 2 % Chrysotile	
HA 10	Insulation, Gray, Duct	---		75 SF
17482-130824-HA10-01		Heater Closet	75 % Chrysotile	
17482-130824-HA10-02		Bathroom 4 Register	75 % Chrysotile	
HA 11	Vapor Paper, Black, Wall	---	---	---
17482-130824-HA11-01		Bathroom 5	ND	
17482-130824-HA11-02		Bathroom 4	ND	
HA 12	Insulation, Gray, Blown-In Attic	---	---	---
17482-130824-HA12-01		Attic South West	ND	
17482-130824-HA12-02		Attic South West	ND	
17482-130824-HA12-03		Attic South West	ND	
HA13	Tape, White, Duct Seam	---		50 SF
17482-130824-HA13-01		Attic - South West By Door	75 % Chrysotile	
HA 14	Vinyl Sheet Flooring, Beige, Pebble Pattern, Remnants/Backing	---		60 SF
17482-130824-HA14-01		1st Floor East Closet on Rolls on Ground	Vinyl Sheet Flooring = ND, Backing = 70 %	
HA 15	Vinyl Floor Tile, 9" Green, Flexachrome, in Box	---		5 SF
Assumed		N/A	Box Marked "Asbestos	
HA 16	Mortar, White/Backing Board, Gray, Floor	---	---	---
17482-130824-HA16-01		Bathroom 1	ND	
17482-130824-HA16-02		Bathroom 2	ND	
HA 17	Mastic, Yellow, Ceramic Floor	---	---	---
17482-130824-HA17-01		Hallway - Entry	ND	
HA 18	Mortar, White/Grout, Red, on Wood	---	---	---
17482-130824-HA18-01		Dining Room	ND	
HA 19	Leveling Compound, White	---	---	---
17482-130824-HA19-01		Bedroom 3	ND	

BULK SAMPLE RESULTS
General Services Agency of Alameda County, TSD
Cherryland Community Center Project
17482 Boston Road, Hayward, CA 94541

Homogeneous Area/Sample Number	Material Description	Sample Location	Lab Result	Quantity
HA 20	Vapor Paper, Black, Floor	---	---	---
17482-130824-HA20-01		Hallway	ND	
HA 21	Mortar, White/Backing Board, Gray, 12" Ceramic Floor	---	---	---
17482-130824-HA21-01		Bathroom 5	ND	
HA 22	Paint, Beige, Exterior	Exterior	---	---
17482-130824-HA22-01		Exterior - West	ND	
17482-130824-HA22-02		Exterior - South West	ND	
HA 23	Putty, White, Window	---	---	---
17482-130824-HA23-01		Living Room Window	ND	
17482-130824-HA23-02		Bedroom 1 Window	ND	
HA 24	Roofing, Black, Shingle	---	---	---
17482-130824-HA24-01		Roof - South East	ND	
17482-130824-HA24-02		Roof - West Central	ND	
HA 25	Mastic, Brown, Baseboard	---	---	---
17482-130824-HA25-01		Bathroom 3	ND	
HA 26	Roofing, Black Sheet	---	---	---
17482-130824-HA26-01		Roof - South Central	ND	
HA 27	Mastic, Gray, Black/Silver Roof	---	---	40 SF
17482-130824-HA27-01		Roof - South Central	10 % Chrysotile	
HA 28	Sealant, Beige, Flashing	---	---	---
17482-130824-HA28-01		Roof - South Central	ND	
HA 29	Sealant, White, Window Frame, Wall Seams	---	---	---
17482-130824-HA29-01		South West Window	ND	
17482-130824-HA29-02		South Central Seam	ND	
HA 30	Sealant, White, Exterior Wall Seams	---	---	3 SF (36 LF)
17482-130824-HA30-01		Exterior - North East	"Trace" Chrysotile	
HA 31	Sealant, Off-White, Door Frame	---	---	---
17482-130824-HA31-01		Exterior of Garage - Door Frame	ND	
HA 48	Mastic, Black, Exterior Seam	---	---	3 SF
17482-130824-HA48-01		Exterior South East Where Garage Attaches to House	10% Chrysotile	
HA 49	Sealant, Tan, Exterior Patch	---	---	---
17482-130824-HA49-01		Exterior of House - North	ND	
HA 50	Concrete, Gray	---	---	---
17482-130824-HA50-01		Exterior Driveway	ND	
17482-130824-HA50-02		Exterior - Walkway	ND	

Homogeneous Area/Sample Number	Material Description	Sample Location	Lab Result	Quantity
HA 51	Roofing, Black & Green, Shingle	---	---	---
17482-130824-HA51-01		Attic	ND	

LEAD

Homogeneous Area/Sample Number	Material Description	Sample Location	Lab Result	Quantity
HA 32	Paint, Beige, Drywall	---	---	---
17482-130824-HA32-01		Living Room	0.031 wt%	
HA 33	Paint, Green, Drywall	---	---	---
17482-130824-HA33-01		Living Room	0.006 wt%	
HA 34	Paint, White, Drywall	---	---	---
17482-130824-HA34-01		Bedroom 1 - Ceiling	0.008 wt%	
HA 35	Paint, White, Wood	---	---	---
17482-130824-HA35-01		Living Room	0.079 wt%	
HA 36	Paint, White, Wood	---	---	---
17482-130824-HA36-01		Bedroom 1	<0.006 wt%	
HA 37	Beige, 15" Ceramic Floor	---	---	---
17482-130824-HA37-01		Entry	7 mg/kg	
HA 38	Beige, Pattern, 15" Ceramic Floor	---	---	---
17482-130824-HA38-01		Kitchen	25 mg/kg	
HA 39	Gray, 12" Ceramic Floor	---	---	---
17482-130824-HA39-01		Bathroom 5	<7 mg/kg	
HA 40	Paint, White, Wood	---	---	No Damage
17482-130824-HA40-01		Main Entry Door	0.85 wt%	
HA 41	Paint, Beige, Wood	---	---	---
17482-130824-HA41-01		Exterior - South West Wall	0.49 wt%	
HA 42	Paint, Beige, Wood	---	---	No Damage
17482-130824-HA42-01		Exterior - West Window of Bedroom 1	1.9 wt%	
HA 43	Paint, White, Wood	---	---	---
17482-130824-HA43-01		Exterior - West Window of Living Room	0.11 wt %	
HA 44	Paint, White, Wood	---	---	---
17482-130824-HA44-01		Exterior of Garage - North West Door Frame	0.009 wt %	
HA 45	Paint , Beige, Wood	---	---	---
17482-130824-HA45-01		Exterior of Garage - East Wall	<0.006 wt%	

BULK SAMPLE RESULTS
General Services Agency of Alameda County, TSD
Cherryland Community Center Project
17482 Boston Road, Hayward, CA 94541

Homogeneous Area/Sample Number	Material Description	Sample Location	Lab Result	Quantity
HA 46	**Paint, White, Wood**	---	---	---
17482-130824-HA46-01		**Exterior of Garage - South East Window Frame**	**<0.006 wt%**	
HA 47	**Gray, Pattern, Ceramic Floor**	---	---	---
17482-130824-HA47-01		**Bathroom 3**	**<7 mg/kg**	

BULK SAMPLE RESULTS
General Services Agency of Alameda County, TSD
Cherryland Community Center Project
278 Hampton Road, Hayward, CA 94541

ASBESTOS

Homogeneous Area/Sample Number	Material Description	Sample Location	Lab Result	Quantity
HA 01	**Paint, White/Concrete, Gray**	---	---	---
278-130824-HA01-01		**North Concrete Pad**	**ND**	
HA 02	**Concrete, Gray**	---	---	---
278-130824-HA02-01		**South Concrete Pad**	**ND**	
HA 03	**Asphalt, Black**	---	---	---
278-130824-HA03-01		**Driveway North**	**ND**	
278-130824-HA03-02		**Driveway South**	**ND**	

LEAD

Homogeneous Area/Sample Number	Material Description	Sample Location	Lab Result	Quantity
HA 04	**Paint, White**	---	---	---
278-130824-HA04-01		**North Concrete Pad**	**0.018 wt%**	

APPENDIX B - Laboratory Reports/Chain-Of-Custody Forms

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Vista Environmental Consultants
Project Manager
2984 Teagarden St.

San Leandro, CA 94577

Client ID: L1161
Report Number: B181270
Date Received: 08/28/13
Date Analyzed: 08/29/13
Date Printed: 08/29/13
First Reported: 08/29/13

Job ID/Site: 1306255 - County of Alameda GSA, Cherryland, 17482 Boston Rd., Hayward, CA
Date(s) Collected:

FALI Job ID: L1161
Total Samples Submitted: 58
Total Samples Analyzed: 58

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17482-130824-HA01-01	11419793						
Layer: White Drywall			**ND**				
Layer: Off-White Joint Compound		Chrysotile	**2 %**				
Layer: White Tape			**ND**				
Layer: Off-White Texture		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (20 %) Fibrous Glass (10 %)							
17482-130824-HA01-02	11419794						
Layer: White Drywall			**ND**				
Layer: Off-White Joint Compound		Chrysotile	**2 %**				
Layer: White Tape			**ND**				
Layer: Off-White Texture		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (20 %) Fibrous Glass (10 %)							
17482-130824-HA01-03	11419795						
Layer: White Drywall			**ND**				
Layer: Off-White Joint Compound		Chrysotile	**2 %**				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (20 %) Fibrous Glass (10 %)							
17482-130824-HA02-01	11419796						
Layer: Off-White Texture		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (Trace)							

Report Number: B181270

Client Name: Vista Environmental Consultants **Date Printed:** 08/29/13

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17482-130824-HA02-02	11419797						
Layer: Off-White Texture		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (Trace)**					
17482-130824-HA02-03	11419798						
Layer: Off-White Texture		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (Trace)**					
17482-130824-HA02-04	11419799						
Layer: Off-White Texture		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (Trace)**					
17482-130824-HA02-05	11419800						
Layer: Off-White Texture		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (Trace)**					
17482-130824-HA02-06	11419801						
Layer: Off-White Texture		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (Trace)**					
17482-130824-HA02-07	11419802						
Layer: Off-White Texture		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (Trace)**					

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17482-130824-HA03-01	11419803						
Layer: Black Woven Material			**ND**				
Layer: Black Non-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (45 %)		**Asbestos (ND)**					
17482-130824-HA03-02	11419804						
Layer: Black Woven Material			**ND**				
Layer: Tan Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (90 %)		**Asbestos (ND)**					
17482-130824-HA04-01	11419805						
Layer: Brown Mastic			**ND**				
Layer: Tan Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (95 %)		**Asbestos (ND)**					
17482-130824-HA04-02	11419806						
Layer: Brown Mastic			**ND**				
Layer: Tan Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (95 %)		**Asbestos (ND)**					
17482-130824-HA05-01	11419807						
Layer: Brown Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (95 %)		**Asbestos (ND)**					
17482-130824-HA05-02	11419808						
Layer: Brown Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (95 %)		**Asbestos (ND)**					
17482-130824-HA06-01	11419809						
Layer: Black Coating		Chrysotile	**2 %**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (2%)**					
17482-130824-HA07-01	11419810						
Layer: Red-Brown Cementitious Material			**ND**				
Layer: White Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17482-130824-HA07-02	11419811						
Layer: Red-Brown Cementitious Material			**ND**				
Layer: White Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17482-130824-HA08-01	11419812						
Layer: White Drywall			**ND**				
Layer: Off-White Joint Compound		Chrysotile	**2 %**				
Layer: White Tape			**ND**				
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (20 %) Fibrous Glass (10 %)							
17482-130824-HA09-01	11419813						
Layer: Pink Drywall			**ND**				
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (20 %) Fibrous Glass (10 %)							
17482-130824-HA09-02	11419814						
Layer: Off-White Texture		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (2%)**					
Cellulose (Trace)							
17482-130824-HA09-03	11419815						
Layer: Off-White Texture		Chrysotile	**2 %**				
Layer: Paint			**ND**				
Layer: White Texture			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (Trace)**					
Cellulose (Trace)							
17482-130824-HA10-01	11419816						
Layer: Grey Fibrous Material		Chrysotile	**75 %**				
Layer: Foil			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (71%)**					
Cellulose (20 %)							
17482-130824-HA10-02	11419817						
Layer: Grey Fibrous Material		Chrysotile	**75 %**				
Total Composite Values of Fibrous Components:		**Asbestos (75%)**					
Cellulose (20 %)							
17482-130824-HA11-01	11419818						
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (95 %)							
17482-130824-HA11-02	11419819						
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (95 %)							

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17482-130824-HA12-01	11419820						
Layer: Off-White Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace) Fibrous Glass (99 %)							
17482-130824-HA12-02	11419821						
Layer: Off-White Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace) Fibrous Glass (99 %)							
17482-130824-HA12-03	11419822						
Layer: Off-White Fibrous Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace) Fibrous Glass (99 %)							
17482-130824-HA13-01	11419823						
Layer: Grey Fibrous Material		Chrysotile	**75 %**				
Total Composite Values of Fibrous Components:		**Asbestos (75%)**					
Cellulose (20 %)							
17482-130824-HA14-01	11419824						
Layer: Brown Sheet Flooring			**ND**				
Layer: Fibrous Backing		Chrysotile	**70 %**				
Total Composite Values of Fibrous Components:		**Asbestos (25%)**					
Cellulose (5 %)							
17482-130824-HA16-01	11419825						
Layer: Red-Brown Cementitious Material			**ND**				
Layer: Grey Mortar			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
17482-130824-HA16-02	11419826						
Layer: Red-Brown Cementitious Material			**ND**				
Layer: Grey Mortar			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
17482-130824-HA17-01	11419827						
Layer: Yellow Mastic			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
17482-130824-HA18-01	11419828						
Layer: Red-Brown Cementitious Material			**ND**				
Layer: Grey Mortar			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17482-130824-HA19-01	11419829						
Layer: White Non-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17482-130824-HA20-01	11419830						
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (90 %)		**Asbestos (ND)**					
17482-130824-HA21-01	11419831						
Layer: Red-Brown Cementitious Material			**ND**				
Layer: Grey Mortar			**ND**				
Layer: Beige Semi-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (5 %) Synthetic (5 %)		**Asbestos (ND)**					
17482-130824-HA22-01	11419832						
Layer: Beige Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17482-130824-HA22-02	11419833						
Layer: Beige Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17482-130824-HA23-01	11419834						
Layer: Grey Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17482-130824-HA23-02	11419835						
Layer: Grey Putty			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17482-130824-HA24-01	11419836						
Layer: Grey Roof Shingle			**ND**				
Layer: Brown Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (30 %) Fibrous Glass (20 %)		**Asbestos (ND)**					
17482-130824-HA24-02	11419837						
Layer: Grey Roof Shingle			**ND**				
Layer: Brown Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (30 %) Fibrous Glass (20 %)		**Asbestos (ND)**					

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17482-130824-HA25-01	11419838						
Layer: Brown Mastic			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17482-130824-HA26-01	11419839						
Layer: Stones			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Layer: Black Tar			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components: Cellulose (5 %) Fibrous Glass (50 %) Comment: Bulk complex sample.		**Asbestos (ND)**					
17482-130824-HA27-01	11419840						
Layer: Black Mastic		Chrysotile	**10 %**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (10%)**					
17482-130824-HA28-01	11419841						
Layer: Off-White Non-Fibrous Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17482-130824-HA29-01	11419842						
Layer: White Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17482-130824-HA29-02	11419843						
Layer: White Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
17482-130824-HA30-01	11419844						
Layer: White Non-Fibrous Material		Chrysotile	**Trace**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (Trace)**					
17482-130824-HA31-01	11419845						
Layer: Off-White Non-Fibrous Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

Report Number: B181270

Client Name: Vista Environmental Consultants

Date Printed: 08/29/13

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
17482-130824-HA48-01	11419846						
Layer: Black Mastic		Chrysotile	**10 %**				
Total Composite Values of Fibrous Components:		**Asbestos (10%)**					
Cellulose (Trace)							
17482-130824-HA49-01	11419847						
Layer: Tan Mastic			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
17482-130824-HA50-01	11419848						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
17482-130824-HA50-02	11419849						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (Trace)							
17482-130824-HA51-01	11419850						
Layer: Green Roof Shingle			**ND**				
Layer: Black Felt			**ND**				
Total Composite Values of Fibrous Components:		**Asbestos (ND)**					
Cellulose (55 %) Fibrous Glass (10 %)							

Tad Thrower

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

VISTA ENVIRONMENTAL
CONSULTING

ASBESTOS BULK SAMPLE LOG

2984 TEAGARDEN STREET
SAN LEANDRO, CA 94577

OFFICE 510.346.8860
FAX 888.653.8889

CLIENT: County of Alameda GSA

DATE: 8/20/13

LOCATION: Cherryland, 17482 Boston Rd., Hayward, CA

PROJECT NUMBER: 1306225

SAMPLED BY: CHRIS BURNS

CAC OR SST NO: 920824

BUILDING	HOMO AREA ID	NUMBER	MATERIAL	DESCRIPTION	LOCATION	QUANTITY (SF/LF/EA)
17482-130824	HA01	01	WBJC	white/white,	with Texture Coat	02
17482-130824-	HA01	02				
17482-130824-	HA01	03				
17482-130824-	HA02	01	Texture Coat, white small			
17482-130824-	HA02	02				
17482-130824-	HA02	03				
17482-130824-	HA02	04				
17482-130824-	HA02	05				
17482-130824-	HA02	06				
17482-130824	HA02	07				

ANALYTICAL METHOD: [✓ PLM] 4~~00 PT COU~~NT TURNAROUND TIME: SAME DAY [✓ 24HR] 48 HR 3 DAY

DATA SENT TO: CHRISTOPHER BURNS VIA E-MAIL: CHRISBURNS@VISTA-ENV.COM
QUESTIONS CALL: 510.658.8860

SPECIAL INSTRUCTIONS:

CHAIN OF CUSTODY:

1. ~~LUIS~~	CHRIS BURNS	8/28/13
TRANSFER SIGNATURE	PRINTED NAME	DATE/TIME
2.	Alejandra Leon	8.28.13 @ 4:30pm
TRANSFER SIGNATURE	PRINTED NAME	DATE/TIME
3.		
TRANSFER SIGNATURE	PRINTED NAME	DATE/TIME

PAGE 1 OF 8

2984 Teagarden Street
San Leandro, CA 94577

ASBESTOS BULK SAMPLE LOG

Office 510.346.8860
Fax 888.653.8889

Client: County of Alameda GSA

Date: 8/20/13

Location: Cherryland, 17482 Boston Rd., Hayward, CA

Project Number: 1306225

Sampled By: CHRIS BURNS

CAC or SST No: 920824

Building	Homo Area ID	Number	Material	Description	Location	Quantity (SF/LF/EA)
17482-130824	HA 03	01	INSULATION	Black&Brown,	Wire	
17482-130824-	HA 03	02	↓	↓		
17482-130824-	HA 04	01	ACT/MASTIC	12" white, non-uniform Hole / Brown		
17482-130824-	HA 04	02	↓	↓		
17482-130824-	HA 05	01	VaporPaper	Brown,	Floor	
17482-130824-	HA 05	02	↓	↓		
17482-130824-	HA 06	01	Mastic	Black,	Sink	
17482-130824-	HA 07	01	Mortar/Firebrick	white/Beige		
17482-130824-	HA 07	02	↓	↓		
17482-130824	HA 08	01	WB/JC	white/white,	with Texture Coat	09

Analytical Method: [✓ PLM] 4~~00 PT COU~~NT Turnaround Time: Same Day [✓ 24HR] 48 HR 3 DAY

Data Sent To: Christopher Burns via E-Mail: chrisburns@vista-env.com
Questions call: 510.658.8860

Special Instructions:

CHAIN OF CUSTODY:

1. ~~LUIS~~ Transfer Signature — CHRIS BURNS Printed Name — 8/20/13 Date/Time

2. Aleon Transfer Signature — Alejandra Leon Printed Name — 8-23-13 @ 1:30pm Date/Time

3. Transfer Signature — Printed Name — Date/Time

Page 2 of 6

VISTA ENVIRONMENTAL
CONSULTING

ASBESTOS BULK SAMPLE LOG

2984 TEAGARDEN STREET
SAN LEANDRO, CA 94577

OFFICE 510.346.8860
FAX 888.653.8889

CLIENT: County of Alameda GSA

DATE: 8/20/13

LOCATION: Cherryland, 17482 Boston Rd., Hayward, CA

PROJECT NUMBER: 1306225

SAMPLED BY: CHRIS BURNS

CAC OR SST NO: 920224

BUILDING	HOMO AREA ID	NUMBER	MATERIAL	DESCRIPTION	LOCATION	QUANTITY (SF/LF/EA)
17482-130824	HA 09	01	Texture Coat	White, Large		
17482-130824-	HA 09	02	↓	↓		
17482-130824-	HA 09	03	↓	↓		
17482-130824-	HA 10	01	INSULATION	Gray,	DUCT	
17482-130824-	HA 10	02	↓	↓		
17482-130824-	HA 11	01	Vapor Paper	Black,	Wall	
17482-130824-	HA 11	02	↓	↓		
17482-130824-	HA 12	01	INSULATION,	Gray,	Blown-IN	
17482-130824-	HA 12	02	↓	↓		
17482-130824	HA 12	03	↓	↓		

ANALYTICAL METHOD: [✓ PLM] 400 ~~PT COUNT~~

TURNAROUND TIME: SAME DAY [✓ 24HR] 48 HR 3 DAY

DATA SENT TO: CHRISTOPHER BURNS VIA E-MAIL: CHRISBURNS@VISTA-ENV.COM
QUESTIONS CALL: 510.658.8860

SPECIAL INSTRUCTIONS: ____________________

CHAIN OF CUSTODY:

1. ~~LUIS~~ TRANSFER SIGNATURE — CHRIS BURNS PRINTED NAME — 8/20/13 DATE/TIME

2. TRANSFER SIGNATURE — Alejandra Leoni PRINTED NAME — 8-28-13 @ 1:30pm DATE/TIME

3. ____________ TRANSFER SIGNATURE — ____________ PRINTED NAME — ____________ DATE/TIME

PAGE 3 OF 8

VISTA ENVIRONMENTAL
CONSULTING

ASBESTOS BULK SAMPLE LOG

2984 TEAGARDEN STREET
SAN LEANDRO, CA 94577

OFFICE 510.346.8860
FAX 888.653.8889

CLIENT: County of Alameda GSA

DATE: 8/20/13

LOCATION: Cherryland, 17482 Boston Rd., Hayward, CA

PROJECT NUMBER: 1306225

SAMPLED BY: CHRIS BURNS

CAC OR SST NO: 920224

BUILDING	HOMO AREA ID	NUMBER	MATERIAL	DESCRIPTION	LOCATION	QUANTITY (SF/LF/EA)
17482-130824	HA 13	01	Tape	White, Duct Seam		
17482-130824-	HA 14	01	VSF/Backing	Beige, Pebble Pattern,		
17482-130824-	HA 16	01	Mortar/Backing Board	White/Gray,	Floor	
17482-130824-	HA 16	02	↓	↓		
17482-130824-	HA 17	01	Mastic	Yellow	Ceramic Floor	
17482-130824-	HA 18	01	Mortar/Grout	White/Red	On Wood	
17482-130824-	HA 19	01	Leveling Compound,	White		
17482-130824-	HA 20	01	Vapor Paper,	Black	Floor	
17482-130824-	HA 21	01	Mortar/Backing Board,	White/Gray,	12" Ceramic Floor	
17482-130824	HA 22	01	Packet	Beige, Ext		

ANALYTICAL METHOD: [✓ PLM] 4~~00 PT COUNT~~ TURNAROUND TIME: SAME DAY [✓ 24HR] 48 HR 3 DAY

DATA SENT TO: CHRISTOPHER BURNS VIA E-MAIL: CHRISBURNS@VISTA-ENV.COM
QUESTIONS CALL: 510.658.8860

SPECIAL INSTRUCTIONS:

CHAIN OF CUSTODY:

	TRANSFER SIGNATURE	PRINTED NAME	DATE/TIME
1.	~~LUIS~~	CHRIS BURNS	8/20/13
2.		Alejandra Luis	8-28-13 @ 1:30pm
3.			

PAGE 4 OF 6

VISTA ENVIRONMENTAL
CONSULTING

ASBESTOS BULK SAMPLE LOG

2984 TEAGARDEN STREET
SAN LEANDRO, CA 94577

OFFICE 510.346.8860
FAX 888.653.8889

CLIENT: County of Alameda GSA

DATE: 8/20/13

LOCATION: Cherryland, 17482 Boston Rd., Hayward, CA

PROJECT NUMBER: 1306225

SAMPLED BY: CHRIS BURNS

CAC OR SST NO: 920224

BUILDING	HOMO AREA ID	NUMBER	MATERIAL	DESCRIPTION	LOCATION	QUANTITY (SF/LF/EA)
17482-130824	HA 22	02	Paint	Beige, EFT	.	
17482-130824-	HA 23	01	Putty	White,	Window	
17482-130824-	HA 23	02	↓	↓		
17482-130824-	HA 24	01	Roofing	Black,	Shingle	
17482-130824-	HA 24	02	↓	↓		
17482-130824-	HA 25	01	Mastic	Brown	Baseboard	
17482-130824-	HA 26	01	Roofing	Black,	Sheet	
17482-130824-	HA 27	01	Mastic	Gray/Black/Silver,	Roof	
17482-130824-	HA 28	01	Sealant	Beige,	Flashing	
17482-130824	HA 29	01	Sealant	White,	Window Frame & Wall Seam	

ANALYTICAL METHOD: [✓ PLM] 4~~00 PT COU~~NT   TURNAROUND TIME: SAME DAY [✓ 24HR] 48 HR 3 DAY

DATA SENT TO: CHRISTOPHER BURNS VIA E-MAIL: CHRISBURNS@VISTA-ENV.COM
QUESTIONS CALL: 510.658.8860

SPECIAL INSTRUCTIONS:

CHAIN OF CUSTODY:

1. ~~LUIS~~ TRANSFER SIGNATURE — CHRIS BURNS PRINTED NAME — 8/20/13 DATE/TIME

2. TRANSFER SIGNATURE — Alejandra Lin PRINTED NAME — 8.28.13 @ 1:30pm DATE/TIME

3. TRANSFER SIGNATURE — PRINTED NAME — DATE/TIME

PAGE 5 OF 8

2984 TEAGARDEN STREET
SAN LEANDRO, CA 94577

ASBESTOS BULK SAMPLE LOG

OFFICE 510.346.8860
FAX 888.653.8889

CLIENT: County of Alameda GSA

DATE: 8/20/13

LOCATION: Cherryland, 17482 Boston Rd., Hayward, CA

PROJECT NUMBER: 1306225

SAMPLED BY: CHRIS BURNS

CAC OR SST NO: 920824

BUILDING	HOMO AREA ID	NUMBER	MATERIAL	DESCRIPTION	LOCATION	QUANTITY (SF/LF/EA)
17482-130824	HA29	02	Sealant	white,	Window Frame, Wall Seams	
17482-130824-	HA30	01	Sealant	white,	Ext Wall Seams	
17482-130824-	HA31	01	Sealant	off-white,	Door Frame	
17482-130824-	HA48	01	Mastic	Black,	Exterior Seam	
17482-130824-	HA49	01	Sealant	Tan,	Exterior Patch	
17482-130824-	HA50	01	Concrete	Gray		
17482-130824-	HA50	02	↓	↓		
17482-130824-	HA51	01	Roofing	5 samples	Shingle in Attic	
17482-130824-	HA					
17482-130824	HA					

ANALYTICAL METHOD: [✓ PLM] 4~~00 PT COU~~NT   TURNAROUND TIME: SAME DAY [✓ 24HR] 48 HR 3 DAY

DATA SENT TO: CHRISTOPHER BURNS VIA E-MAIL: CHRISBURNS@VISTA-ENV.COM
QUESTIONS CALL: 510.658.8860

SPECIAL INSTRUCTIONS:

CHAIN OF CUSTODY:

1. ~~LUTS~~ TRANSFER SIGNATURE — CHRIS BURNS PRINTED NAME — 8/20/13 DATE/TIME

2. TRANSFER SIGNATURE — Alejandra Lens PRINTED NAME — 8-28-13 @1:30pm DATE/TIME

3. TRANSFER SIGNATURE — PRINTED NAME — DATE/TIME

PAGE 6 OF 6

Metals Analysis of Paints

Vista Environmental Consultants		**Client ID:**	L1161
Project Manager		**Report Number:**	M142262
2984 Teagarden St.		**Date Received:**	08/28/13
		Date Analyzed:	08/29/13
San Leandro, CA 94577		**Date Printed:**	08/29/13
		First Reported:	08/29/13

Job ID / Site: 1306225, County of Almeda GSA-Cherryland Community Center, 17482 Boston Rd., Hayward, CA

FALI Job ID: L1161

Date(s) Collected: 8/24/13

Total Samples Submitted: 12

Total Samples Analyzed: 12

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
17482-130824-HA32-01	30474694	Pb	0.031	wt%	0.007	EPA 3050B/7420
17482-130824-HA33-01	30474695	Pb	0.006	wt%	0.006	EPA 3050B/7420
17482-130824-HA34-01	30474696	Pb	0.008	wt%	0.006	EPA 3050B/7420
17482-130824-HA35-01	30474697	Pb	0.079	wt%	0.006	EPA 3050B/7420
17482-130824-HA36-01	30474698	Pb	< 0.006	wt%	0.006	EPA 3050B/7420
17482-130824-HA40-01	30474699	Pb	0.85	wt%	0.06	EPA 3050B/7420
17482-130824-HA41-01	30474700	Pb	0.49	wt%	0.03	EPA 3050B/7420
17482-130824-HA42-01	30474701	Pb	1.9	wt%	0.2	EPA 3050B/7420
17482-130824-HA43-01	30474702	Pb	0.11	wt%	0.006	EPA 3050B/7420
17482-130824-HA44-01	30474703	Pb	0.009	wt%	0.006	EPA 3050B/7420
17482-130824-HA45-01	30474704	Pb	< 0.006	wt%	0.006	EPA 3050B/7420
17482-130824-HA46-01	30474705	Pb	< 0.006	wt%	0.006	EPA 3050B/7420

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.

Daniele Siu

Daniele Siu, Laboratory Supervisor, Hayward Laboratory

Final Report

Forensic Analytical Laboratories

Metals Analysis of Bulks

Vista Environmental Consultants
Project Manager
2984 Teagarden St.

San Leandro, CA 94577

Client ID: L1161
Report Number: M142263
Date Received: 08/28/13
Date Analyzed: 08/29/13
Date Printed: 08/29/13
First Reported: 08/29/13

Job ID / Site: 1306225, County of Almeda GSA-Cherryland Community Center, 17482 Boston Rd., Hayward, CA

FALI Job ID: L1161

Date(s) Collected: 8/24/13

Total Samples Submitted: 4
Total Samples Analyzed: 4

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
17482-130824-HA37-01	30474706	Pb	7	mg/kg	7	EPA 3050B/7420
17482-130824-HA38-01	30474707	Pb	25	mg/kg	6	EPA 3050B/7420
17482-130824-HA39-01	30474708	Pb	< 7	mg/kg	7	EPA 3050B/7420
17482-130824-HA47-01	30474709	Pb	< 7	mg/kg	7	EPA 3050B/7420

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.

Daniele Siu

Daniele Siu, Laboratory Supervisor, Hayward Laboratory

1of2

Forensic Analytical Laboratories, Inc.

Analysis Request Form (COC)

Client Name & Address:
Vista Environmental Consulting, Inc.
2984 Teagarden Street
San Leandro, CA 94577

PO / Job#: 1306225 Date: 8/28/13

Turn Around Time: Same Day / [✓ 1Day] / 2Day / 3Day / 4Day / 5Day

☐ PCM: ☐ NIOSH 7400A / ☐ NIOSH 7400B ☐ Rotometer

☐ PLM: ☐ Standard / ☐ Point Count 400 / 1000 / ☐ CARB 435

Contact: Chris Burns

☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402
☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield
☐ TEM Water: ☐ Potable / ☐ Non-Potable / ☐ Weight %
☐ TEM Microvac: ☐ Qual(+/-) / ☐ D5755(str/area) / ☐ D5756(str/mass)

Phone: (510) 346-8860 Fax: (888) 296-0271

E-mail: chrisburns@vista-env.com & molli@vista-env.com

☐ IAQ Particle Identification (PLM LAB) ☐ PLM Opaques/Soot
☐ Particle Identification (TEM LAB) ☐ Special Project

Site: County of Alameda GSA-Cherryland Community Cente

☒ Metals Analysis: Method: Flame AA
Matrix: Paint Chip
Analytes: Pb

Site Location: 17482 Boston Rd., Hayward, CA

Comments:

Report Via: ☐ Fax ☐ E-Mail ☐ Verbal

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg. LPM	Total Time	
17482-130824-HA32-01	8/24/13	Beige, Drywall	A P C				
17482-130824-HA33-01		Greige, Drywall	A P C				
17482-130824-HA34-01		White, Drywall	A P C				
17482-130824-HA35-01		White, Wood, Base	A P C				
17482-130824-HA36-01		White, Wood, DF	A P C				
17482-130824-HA37-01		Beige, Ceramic	A P C				
17482-130824-HA38-01		Beige, Pattern, Ceramic	A P C				
17482-130824-HA39-01		Gray, Ceramic	A P C				
17482-130824-HA40-01		White, Wood, Door	A P C				
17482-130824-HA41-01		Beige, Wood,	A P C				

Sampled By: Chris Burns Date: 8/28/13 Time:

Shipped Via: ☐ Fed Ex ☐ DHL ☐ UPS ☐ US Mail ☐ Courier ☒ Drop Off ☐ Other:

Relinquished By:	Relinquished By:	Relinquished By:
Date / Time:	Date / Time:	Date / Time:
Received By:	Received By:	Received By:
Date / Time: 8-28-13 @ 1:30pm	Date / Time:	Date / Time:
Condition Acceptable? ☒ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No

2of 2

Forensic Analytical Laboratories, Inc.

Analysis Request Form (COC)

Client Name & Address:
Vista Environmental Consulting, Inc.
2984 Teagarden Street
San Leandro, CA 94577

PO / Job#: 1308225   Date: 8/28/13

Turn Around Time: Same Day / [✓ 1Day] / 2Day / 3Day / 4Day / 5Day

☐ PCM: ☐ NIOSH 7400A / ☐ NIOSH 7400B   ☐ Rotometer

☐ PLM: ☐ Standard / ☐ Point Count 400 - 1000 / ☐ CARB 435

☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402
☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield
☐ TEM Water: ☐ Potable / ☐ Non-Potable / ☐ Weight %
☐ TEM Microvac: ☐ Qual(+/-) / ☐ D5755(str/area) / ☐ D5756(str/mass)

☐ IAQ Particle Identification (PLM LAB)   ☐ PLM Opaques/Soot
☐ Particle Identification (TEM LAB)   ☐ Special Project

☒ Metals Analysis: Method: Flame AA
Matrix: Paint Chip
Analytes: Pb

Contact: Chris Burns

Phone: (510) 346-8860   Fax: (888) 296-0271

E-mail: chrisburns@vista-env.com & molli@vista-env.com

Site: County of Alameda GSA-Cherryland Community Cent

Site Location: 17482 Boston Rd., Hayward, CA

Comments:

Report Via: ☐ Fax ☐ E-Mail ☐ Verbal

Sample ID	Date / Time	Sample Location / Description	Type	Time On/Off	Avg. LPM	Total Time	Sample Area / Air Volume
			FOR AIR SAMPLES ONLY				
17482-130824-HA 42-01	8/24/13	Beige, Wood, Windows	☐A ☐P ☐C				
17482-130824-HA 43-01		White, Wood, WF	☐A ☐P ☐C				
17482-130824-HA 44-01		White, Wood, Door, Add	☐A ☐P ☐C				
17482-130824-HA 45-01		Beige, Wood, Walls, Add	☐A ☐P ☐C				
17482-130824-HA 46-01		White, Wood, WF, Add	☐A ☐P ☐C				
17482-130824-HA 47-01		Gray, Pattern, Ceramic	☐A ☐P ☐C				
17482-130824-HA 48.		Void 16samples	☐A ☐P ☐C				
17482-130824-HA			☐A ☐P ☐C				
17482-130824-HA			☐A ☐P ☐C				
17482-130824-HA			☐A ☐P ☐C				

Sampled By: Chris Burns   Date: 8/20/13   Time:

Shipped Via: ☐ Fed Ex ☐ DHL ☐ UPS ☐ US Mail ☐ Courier ☒ Drop Off ☐ Other:

Relinquished By:	Relinquished By:	Relinquished By:
Date / Time:	Date / Time:	Date / Time:
Received By: 0%	Received By:	Received By:
Date / Time: 8-28-13@1:3pm	Date / Time:	Date / Time:
Condition Acceptable? ☒ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No

Forensic Analytical Laboratories

Final Report

Bulk Asbestos Analysis

(EPA Method 600/R-93-116, Visual Area Estimation)

Vista Environmental Consultants
Project Manager
2984 Teagarden St.

San Leandro, CA 94577

Client ID: L1161
Report Number: B181271
Date Received: 08/28/13
Date Analyzed: 08/29/13
Date Printed: 08/29/13
First Reported: 08/29/13

Job ID/Site: 1306225 - County of Alameda GSA-Cherryland Community Center, 278 Hampton Rd., Hayward, CA
Date(s) Collected: 08/28/2013

FALI Job ID: L1161
Total Samples Submitted: 4
Total Samples Analyzed: 4

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
278-130824-HA01-01	11419861						
Layer: Grey Cementitious Material			**ND**				
Layer: Paint			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
278-130824-HA02-01	11419862						
Layer: Grey Cementitious Material			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
278-130824-HA03-01	11419863						
Layer: Black Cementitious Tar			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					
278-130824-HA03-02	11419864						
Layer: Black Cementitious Tar			**ND**				
Total Composite Values of Fibrous Components: Cellulose (Trace)		**Asbestos (ND)**					

Tad Thrower

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

Forensic Analytical Laboratories, Inc.

Analysis Request Form (COC)

Client Name & Address:
Vista Environmental Consulting, Inc.
2984 Teagarden Street
San Leandro, CA 94577

PO / Job#: 1306225

Date: 8/28/13

Turn Around Time: Same Day / [✓ 1Day] / 2Day / 3Day / 4Day / 5Day

~~☐ PCM~~: ☐ NIOSH 7400A / ☐ NIOSH 7400B ☐ Rotometer

[✓ ☒ PLM] / [✓ ☒ Standard] / ☐ Point Count 400 / 1000 / ☐ CARB 435

Contact: Chris Burns

Phone: (510) 346-8860

Fax: (888) 296-0271

☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402
☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield
☐ TEM Water: ☐ Potable / ☐ Non-Potable / ☐ Weight %
☐ TEM Microvac: ☐ Qual(+/-) / ☐ D5755(str/area) / ☐ D5756(str/mass)

E-mail: chrisburns@vista-env.com & molli@vista-env.com

☐ IAQ Particle Identification (PLM LAB) ☐ PLM Opaques/Soot
☐ Particle Identification (TEM LAB) ☐ Special Project

Site: County of Alameda GSA-Cherryland Community Cente

Site Location: 278 Hampton Rd., Hayward, CA

☐ Metals Analysis: Method:
Matrix:
Analytes:

Comments:

Report Via: ☐ Fax ☐ E-Mail ☐ Verbal

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY Type	Time On/Off	Avg. LPM	Total Time	Sample Area / Air Volume
278-130824-HA01-01	8/28/13	Patch/Concrete White/Gray	A P C				
278-130824-HA02-01		Concrete, Gray	A P C				
278-130824-HA03-01		Asphalt, Black	A P C				
278-130824-HA03-02			A P C				
			A P C				
		4 Samples	A P C				
			A P C				
			A P C				
			A P C				
			A P C				

Sampled By: Chris Burns Date: 8/28/13 Time:

Shipped Via: ☐ Fed Ex ☐ DHL ☐ UPS ☐ US Mail ☐ Courier [✓ ☐ Drop Off] ☐ Other:

Relinquished By:	Relinquished By:	Relinquished By:
Date / Time: 8/28/13	Date / Time:	Date / Time:
Received By:	Received By:	Received By:
Date / Time: 8-28-13 @ 1:20pm	Date / Time:	Date / Time:
Condition Acceptable? ☒ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No

San Francisco Office: 3777 Depot Road, Suite 409, Hayward, California 94545-2761 / Ph: (510)887-8828 * (800)827-3274 / Fax: (510)887-4218
Los Angeles Office: 2959 Pacific Commerce Drive, Rancho Dominguez, California 90221 / Ph: (310)763-2374 * (888)813-9417 / Fax: (310)763-4450
Las Vegas Office: 6765 S. Eastern Avenue, Suite 3, Las Vegas, Nevada 89119 / Ph: (702)784-0040 / Fax: (702)784-0030

Metals Analysis of Paints

Vista Environmental Consultants
Project Manager
2984 Teagarden St.

San Leandro, CA 94577

Client ID: L1161
Report Number: M142261
Date Received: 08/28/13
Date Analyzed: 08/29/13
Date Printed: 08/29/13
First Reported: 08/29/13

Job ID / Site: 1306225, County of Alameda GSA-Cherryland Community Center, 278 Hampton Rd., Hayward, CA

FALI Job ID: L1161

Date(s) Collected: 8/24/13

Total Samples Submitted: 1
Total Samples Analyzed: 1

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
278-130824-HA04-01	30474693	Pb	0.018	wt%	0.006	EPA 3050B/7420

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.

Daniele Siu

Daniele Siu, Laboratory Supervisor, Hayward Laboratory

Forensic Analytical Laboratories, Inc.

Analysis Request Form (COC)

Client Name & Address:
Vista Environmental Consulting, Inc.
2984 Teagarden Street
San Leandro, CA 94577

PO / Job#: 1306225
Date: 8/28/13

Turn Around Time: Same Day / [✓ 1Day] / 2Day / 3Day / 4Day / 5Day

☐ PCM: ☐ NIOSH 7400A / ☐ NIOSH 7400B ☐ Rotometer

☐ PLM: ☐ Standard / ☐ Point Count 400 / 1000 / ☐ CARB 435

☐ TEM Air: ☐ AHERA / ☐ Yamate2 / ☐ NIOSH 7402
☐ TEM Bulk: ☐ Quantitative / ☐ Qualitative / ☐ Chatfield
☐ TEM Water: ☐ Potable / ☐ Non Potable / ☐ Weight %
☐ TEM Microvac: ☐ Qual(+/-) / ☐ D5755(str/area) / ☐ D5756(str/mass)

☐ IAQ Particle Identification (PLM LAB) ☐ PLM Opaques/Soot
☐ Particle Identification (TEM LAB) ☐ Special Project

☒ Metals Analysis: Method: FlAME AA
Matrix: PAINT
Analytes: Pb

Contact: Chris Burns

Phone: (510) 346-8860
Fax: (888) 296-0271

E-mail: chrisburns@vista-env.com & molli@vista-env.com

Site: County of Alameda GSA-Cherryland Community Cente

Site Location: 278 Hampton Rd., Hayward, CA

Comments:

Report Via: ☐ Fax ☐ E-Mail ☐ Verbal

Sample ID	Date / Time	Sample Location / Description	Type	FOR AIR SAMPLES ONLY			Sample Area / Air Volume
				Time On/Off	Avg. LPM	Total Time	
278-130824-HA04-01	8/24/13	White Paint, Concrete	A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				

Sampled By: CHRIS BURNS
Date: 8/28/13
Time:

Shipped Via: ☐ Fed Ex ☐ DHL ☐ UPS ☐ US Mail ☐ Courier ☒ Drop Off ☐ Other:

Relinquished By:	Relinquished By:	Relinquished By:
Date / Time: 8/28/13	Date / Time:	Date / Time:
Received By: 6%	Received By:	Received By:
Date / Time: 8-28-13 @ 1:30pm	Date / Time:	Date / Time:
Condition Acceptable? ☒ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No	Condition Acceptable? ☐ Yes ☐ No

APPENDIX C - Survey Team Certifications

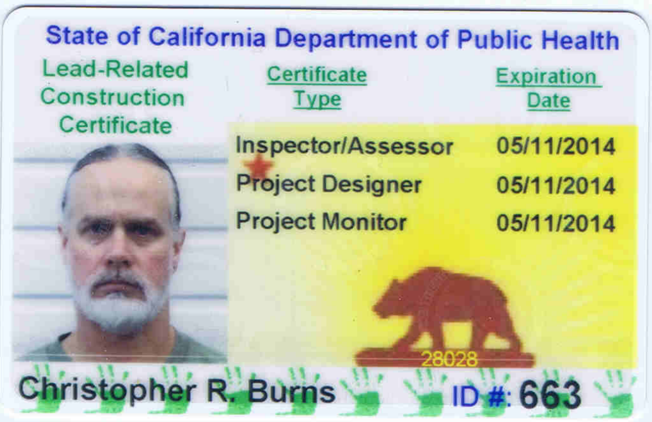
State of California
Division of Occupational Safety and Health
Certified Asbestos Consultant

Christopher Robert Burns
Name

Certification No. **92-0224**

Expires on **07/10/14**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.



State of California Department of Public Health

Lead-Related Construction Certificate

Certificate Type	Expiration Date
Inspector/Assessor	05/11/2014
Project Designer	05/11/2014
Project Monitor	05/11/2014

28028

Christopher R. Burns ID #: 663

State of California
Division of Occupational Safety and Health

Certified Site Surveillance Technician

Luis Javier Rocha
Name

Certification No. **02-3244**

Expires on **02/19/14**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.

State of California Department of Public Health

Lead-Related Construction Certificate

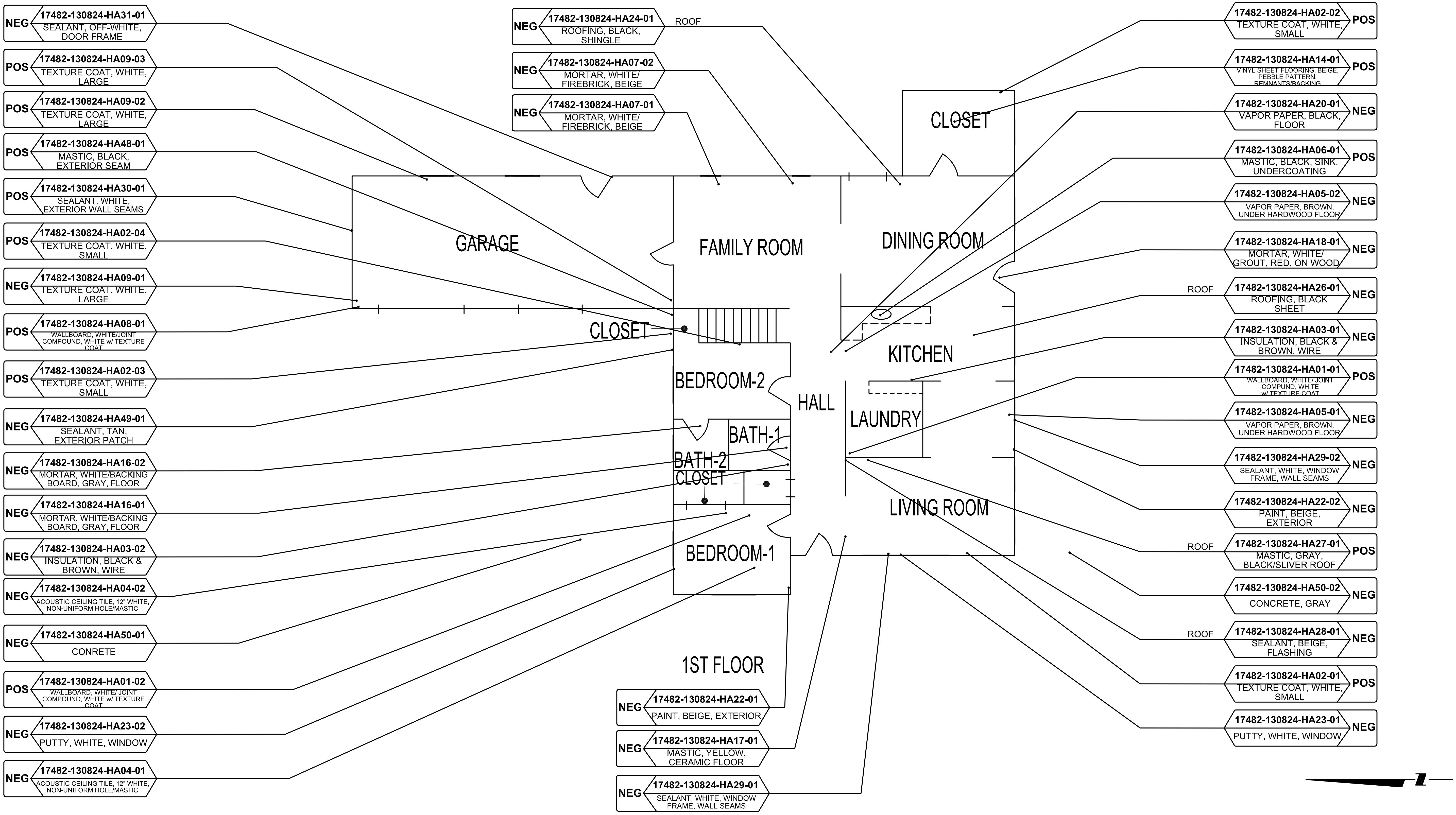
Certificate Type	Expiration Date
Sampling Technician	04/16/2014

27692

Luis J. Rocha

ID #: **19869**

APPENDIX D - Floor Plans/Drawings



VISTA ENVIRONMENTAL CONSULTING

2984 TEAGARDEN STREET
SAN LEANDRO, CA 94577
510-346-8860

CERTIFIED ASBESTOS CONSULTANT
CHRISTOPHER R. BURNS
No. 92-0224

PROJECT TITLE

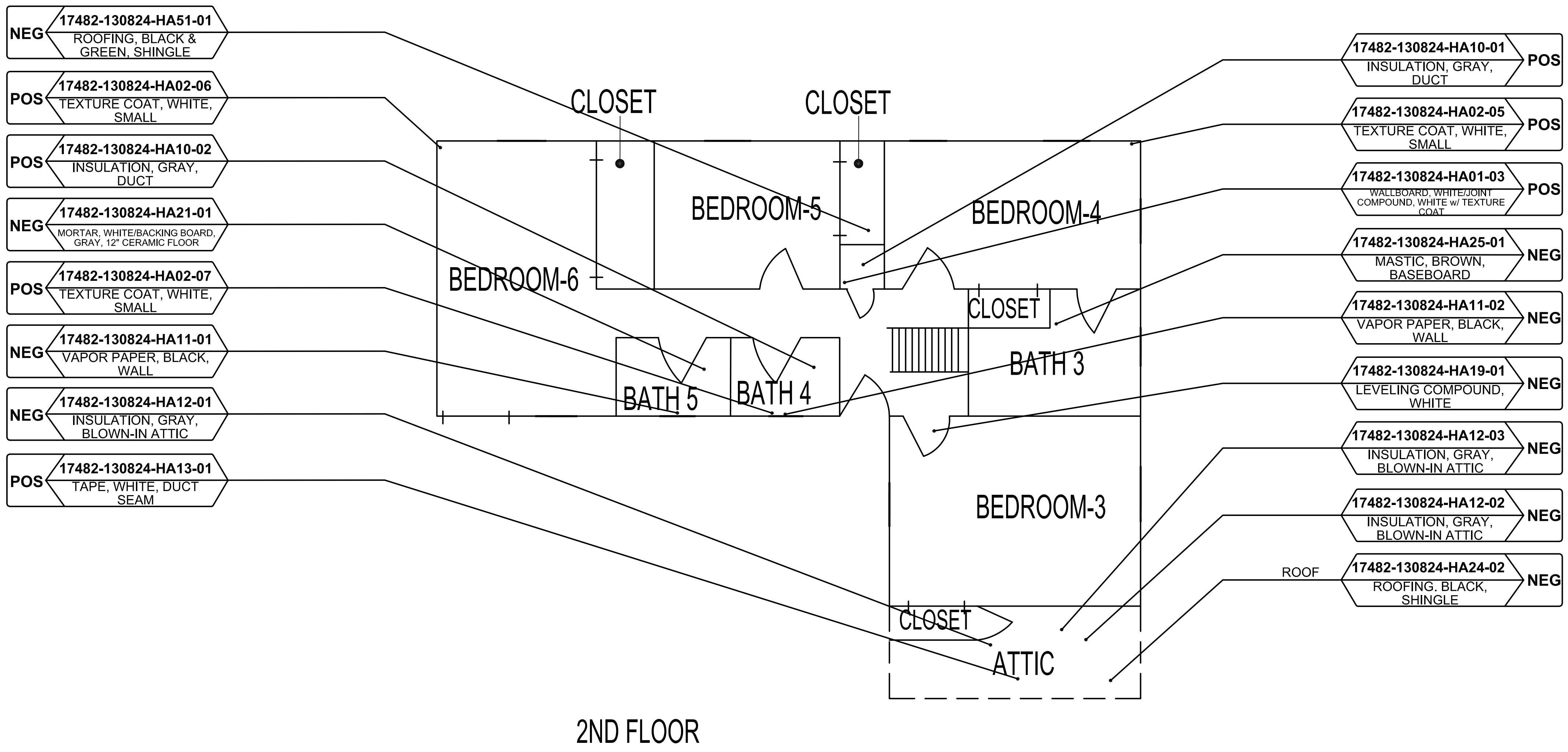
GENERAL SERVICES AGENCY OF ALAMEDA COUNTY, TSD
CHERRYLAND COMMUNITY CENTER PROJECT
17482 BOSTON ROAD
HAYWARD, CA

SHEET TITLE

ASBESTOS SAMPLE LOCATION
FIRST FLOOR, EXTERIOR AND ROOF

SCALE: NTS
DRAWN BY: ADF
CHECKED BY: CB
PROJECT No.1306225
DATE: 09/13/2013
DRAWING No.

FIGURE
1



VISTA ENVIRONMENTAL CONSULTING

2984 TEAGARDEN STREET
SAN LEANDRO, CA 94577
510-346-8860

CHRISTOPHER R. BURNS
No. 92-0224

PROJECT TITLE

GENERAL SERVICES AGENCY OF ALAMEDA COUNTY, TSD
CHERRYLAND COMMUNITY CENTER PROJECT
17482 BOSTON ROAD
HAYWARD, CA

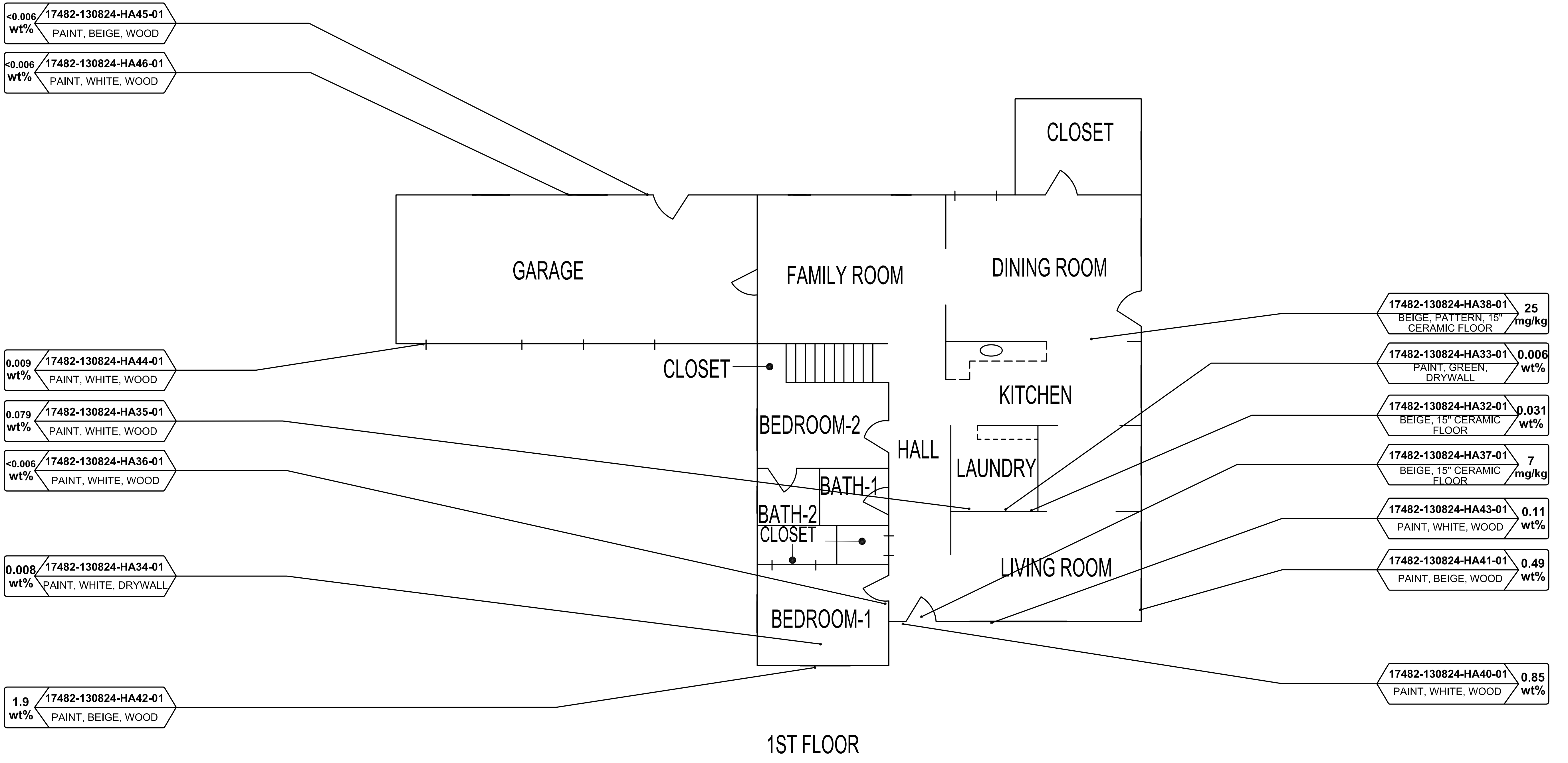
SHEET TITLE

ASBESTOS SAMPLE LOCATION
SECOND FLOOR

SCALE: NTS
DRAWN BY: ADF
CHECKED BY: CB
PROJECT No.1306225
DATE: 09/13/2013
DRAWING No.

FIGURE

2



VISTA ENVIRONMENTAL CONSULTING

2984 TEAGARDEN STREET
SAN LEANDRO, CA 94577
510-346-8860

CERTIFIED ASBESTOS CONSULTANT ★ CHRISTOPHER R. BURNS No. 92-0224 ★ STATE OF CALIFORNIA

PROJECT TITLE

GENERAL SERVICES AGENCY OF ALAMEDA COUNTY, TSD
CHERRYLAND COMMUNITY CENTER PROJECT
17482 BOSTON ROAD
HAYWARD, CA

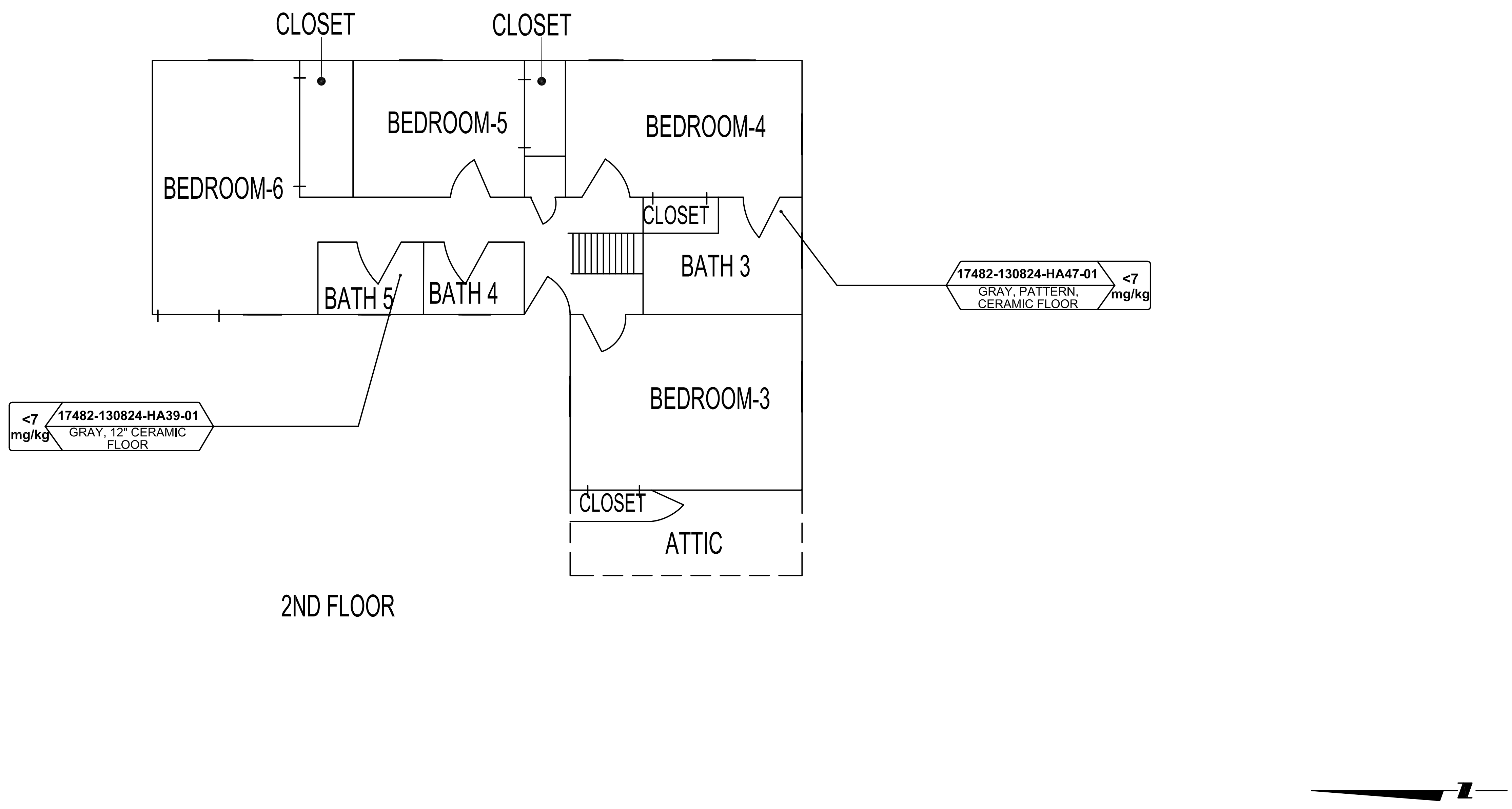
SHEET TITLE

LEAD SAMPLE LOCATION
FIRST FLOOR, EXTERIOR AND ROOF

SCALE: NTS
DRAWN BY: ADF
CHECKED BY: CB
PROJECT No.1306225
DATE: 09/13/2013
DRAWING No.

FIGURE

3



VISTA ENVIRONMENTAL CONSULTING

2984 TEAGARDEN STREET
SAN LEANDRO, CA 94577
510-346-8860

CERTIFIED ASBESTOS CONSULTANT
CHRISTOPHER R. BURNS
No. 92-0224
STATE OF CALIFORNIA

PROJECT TITLE

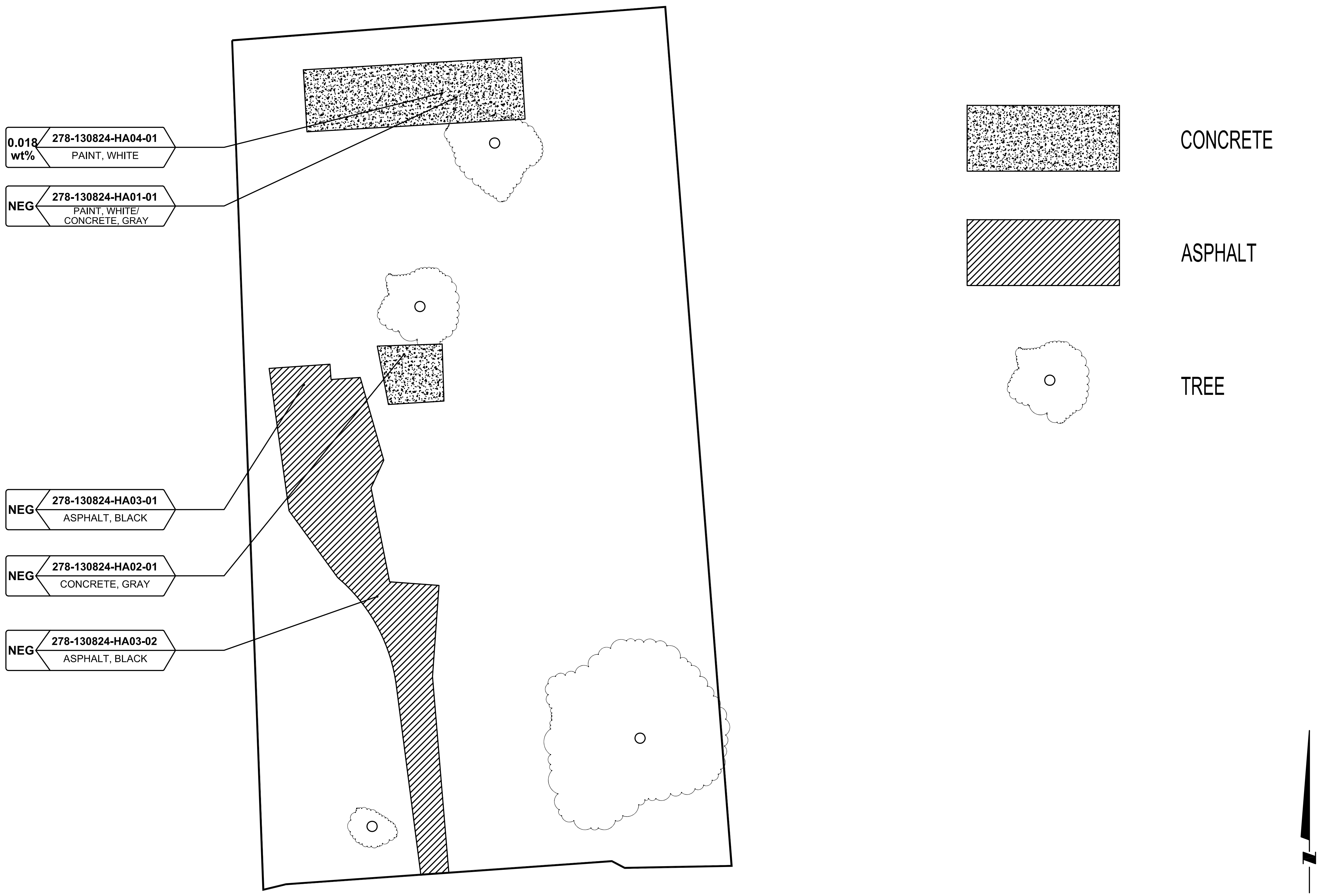
GENERAL SERVICES AGENCY OF ALAMEDA COUNTY, TSD
CHERRYLAND COMMUNITY CENTER PROJECT
17482 BOSTON ROAD
HAYWARD, CA

SHEET TITLE

LEAD SAMPLE LOCATION
SECOND FLOOR

SCALE: NTS
DRAWN BY: ADF
CHECKED BY: CB
PROJECT No.1306225
DATE: 09/13/2013
DRAWING No.

FIGURE
4



VISTA ENVIRONMENTAL CONSULTING

2984 TEAGARDEN STREET
SAN LEANDRO, CA 94577
510-346-8860

CERTIFIED ASBESTOS CONSULTANT
CHRISTOPHER R. BURNS
No. 92-0224
STATE OF CALIFORNIA

PROJECT TITLE

GENERAL SERVICES AGENCY OF ALAMEDA COUNTY, TSD
CHERRYLAND COMMUNITY CENTER PROJECT
278 HAMPTON ROAD
HAYWARD, CA

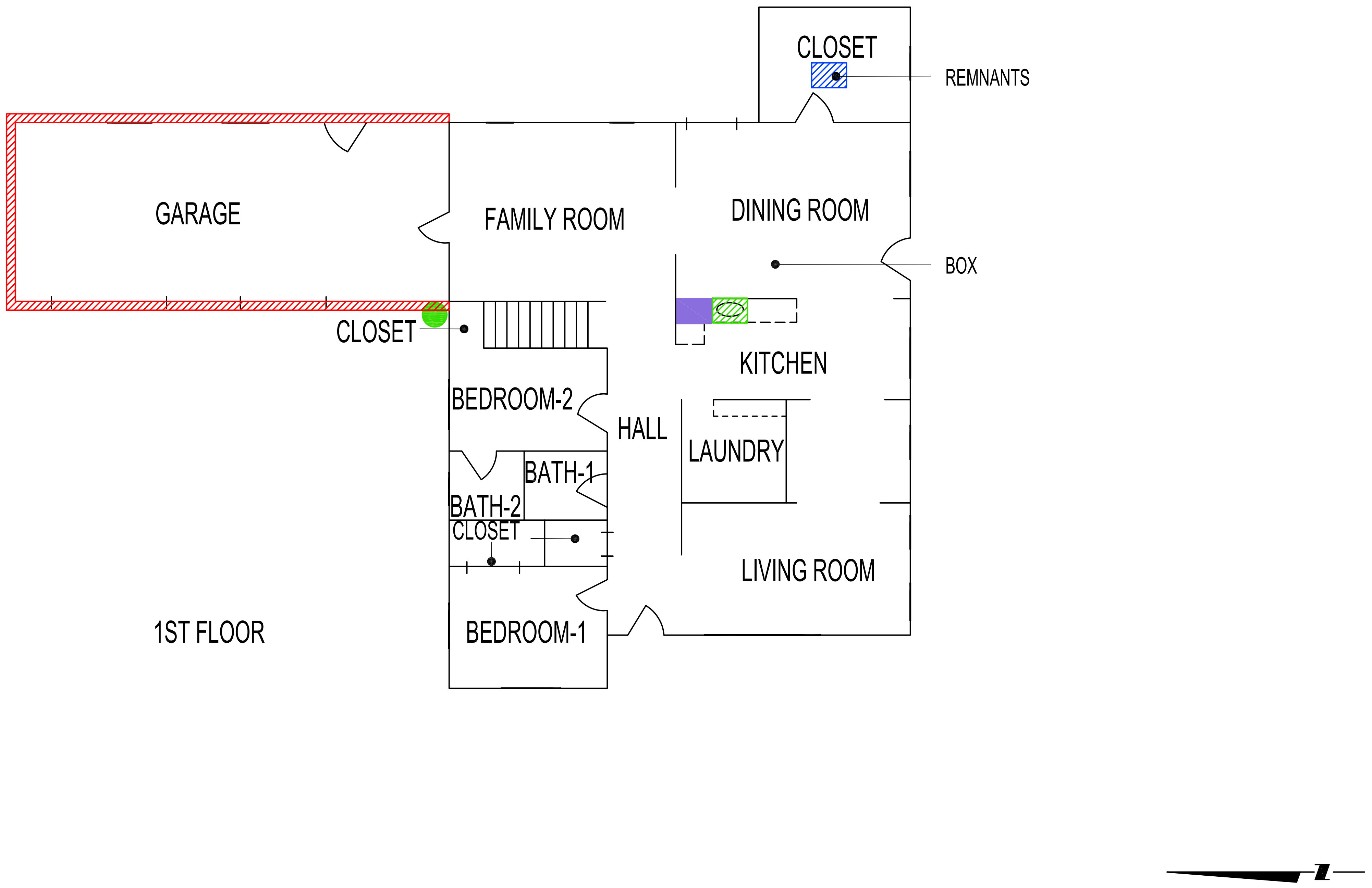
SHEET TITLE

ASBESTOS AND LEAD SAMPLE LOCATION SITE

SCALE: NTS
DRAWN BY: ADF
CHECKED BY: CB
PROJECT No.1306225
DATE: 09/13/2013
DRAWING No.

FIGURE
5

LEGEND	
▨	ASBESTOS-CONTAINING SINK MASTIC
▨	ASBESTOS-CONTAINING VINYL SHEET FLOORING REMNANTS
■	ASBESTOS-CONTAINING 9" VINYL FLOOR TILE
▨	ASBESTOS-CONTAINING WHITE SEALANT ON EXTERIOR WOOD WALL SEAMS
●	ASBESTOS CONTAINING BLACK MASTIC ON EXTERIOR WALL PATCH



NOTE:

① ASBESTOS CONTAINING GRAY, BLACK AND SILVER MASTIC ON ROOF PATCHINGS AND PENETRATIONS.

② ASBESTOS CONTAINING WALL/BOARD/JOINT COMPOUND ON WALLS AND CEILINGS THROUGHOUT.

③ ASBESTOS CONTAINING TEXTURE COAT ON WALLS AND CEILINGS THROUGHOUT.

④ ASBESTOS CONTAINING INSULATION AND TAPE ON HEATER CLOSET, ATTIC SPACE, CRAWLSPACE, VOIDS AND REGISTERS.

VISTA ENVIRONMENTAL
CONSULTING
2984 TEAGARDEN STREET
SAN LEANDRO, CA 94577
510-346-8860

CHRISTOPHER R. BURNS
No. 92-0224

PROJECT TITLE
GENERAL SERVICES AGENCY OF ALAMEDA COUNTY, TSD
CHERRYLAND COMMUNITY CENTER PROJECT
17482 BOSTON ROAD
HAYWARD, CA

SHEET TITLE
ASBESTOS MATERIAL LOCATION
FIRST FLOOR

SCALE: NTS
DRAWN BY: ADF
CHECKED BY: CB
PROJECT No.1306225
DATE: 09/13/2013
DRAWING No.

FIGURE
6

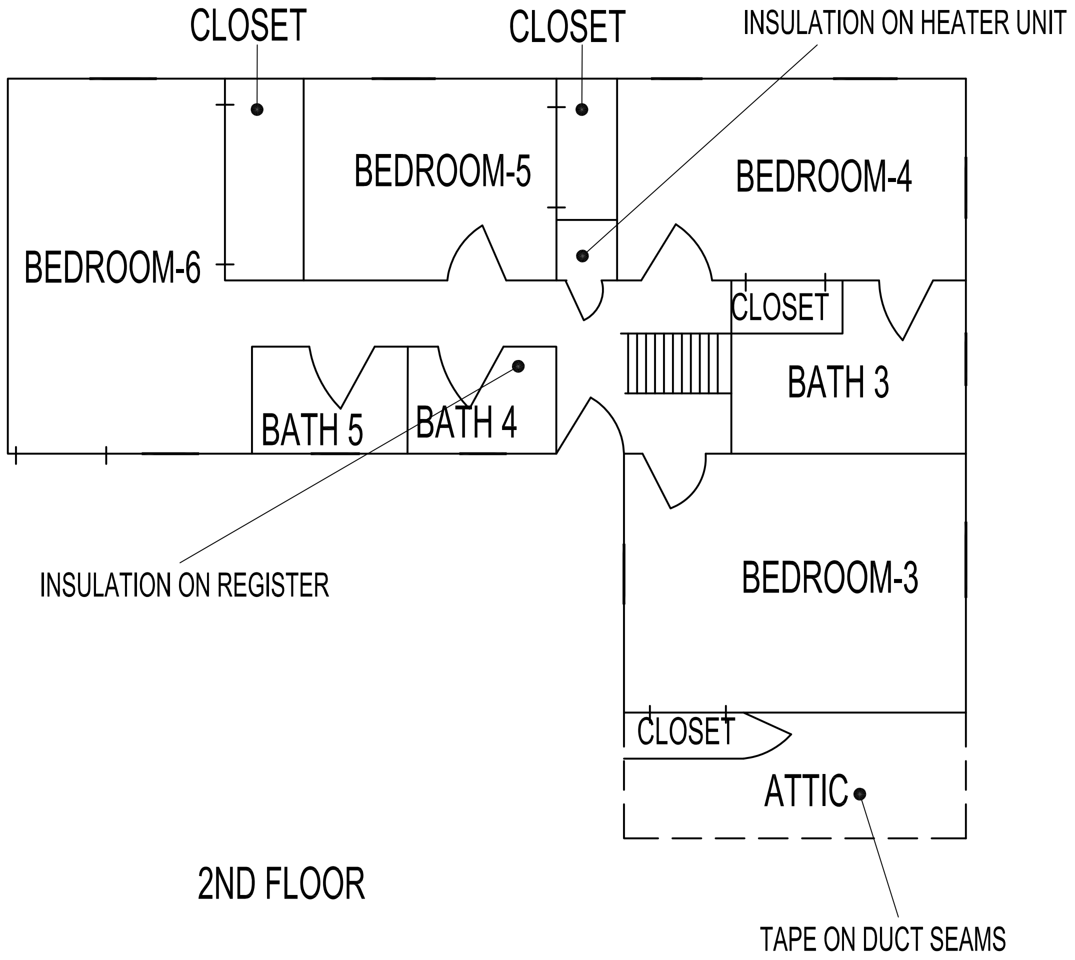
NOTE:

① ASBESTOS CONTAINING GRAY, BLACK AND SILVER MASTIC ON ROOF PATCHINGS AND PENETRATIONS.

② ASBESTOS CONTAINING WALL/BOARD/JOINT COMPOUND ON WALLS AND CEILINGS THROUGHOUT.

③ ASBESTOS CONTAINING TEXTURE COAT ON WALLS AND CEILINGS THROUGHOUT.

④ ASBESTOS CONTAINING INSULATION AND TAPE ON HEATER CLOSET, ATTIC SPACE, CRAWLSPACE, VOIDS AND REGISTERS.



VISTA ENVIRONMENTAL CONSULTING

2984 TEAGARDEN STREET
SAN LEANDRO, CA 94577
510-346-8860

CHRISTOPHER R. BURNS
No. 92-0224

PROJECT TITLE

GENERAL SERVICES AGENCY OF ALAMEDA COUNTY, TSD
CHERRYLAND COMMUNITY CENTER PROJECT
17482 BOSTON ROAD
HAYWARD, CA

SHEET TITLE

ASBESTOS MATERIAL LOCATION
SECOND FLOOR

SCALE: NTS
DRAWN BY: ADF
CHECKED BY: CB
PROJECT No.1306225
DATE: 09/13/2013
DRAWING No.

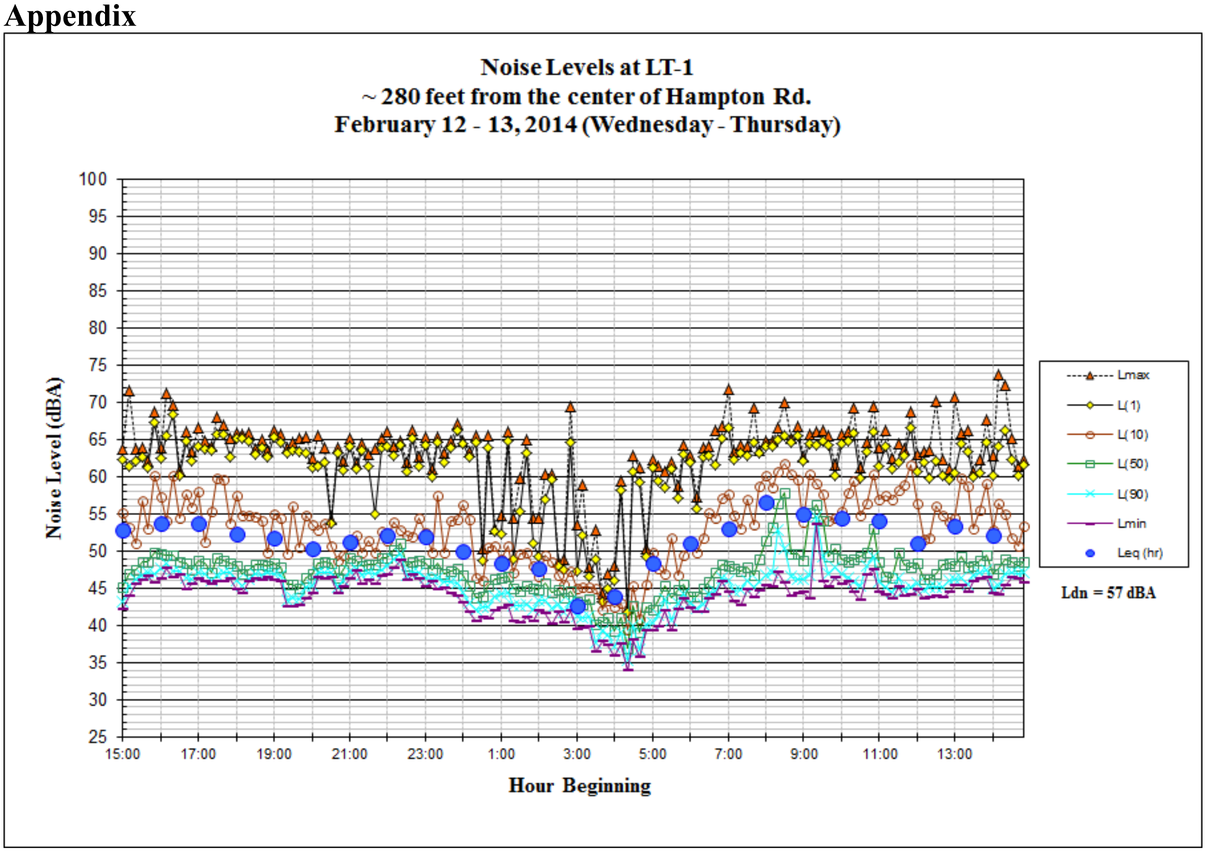
FIGURE

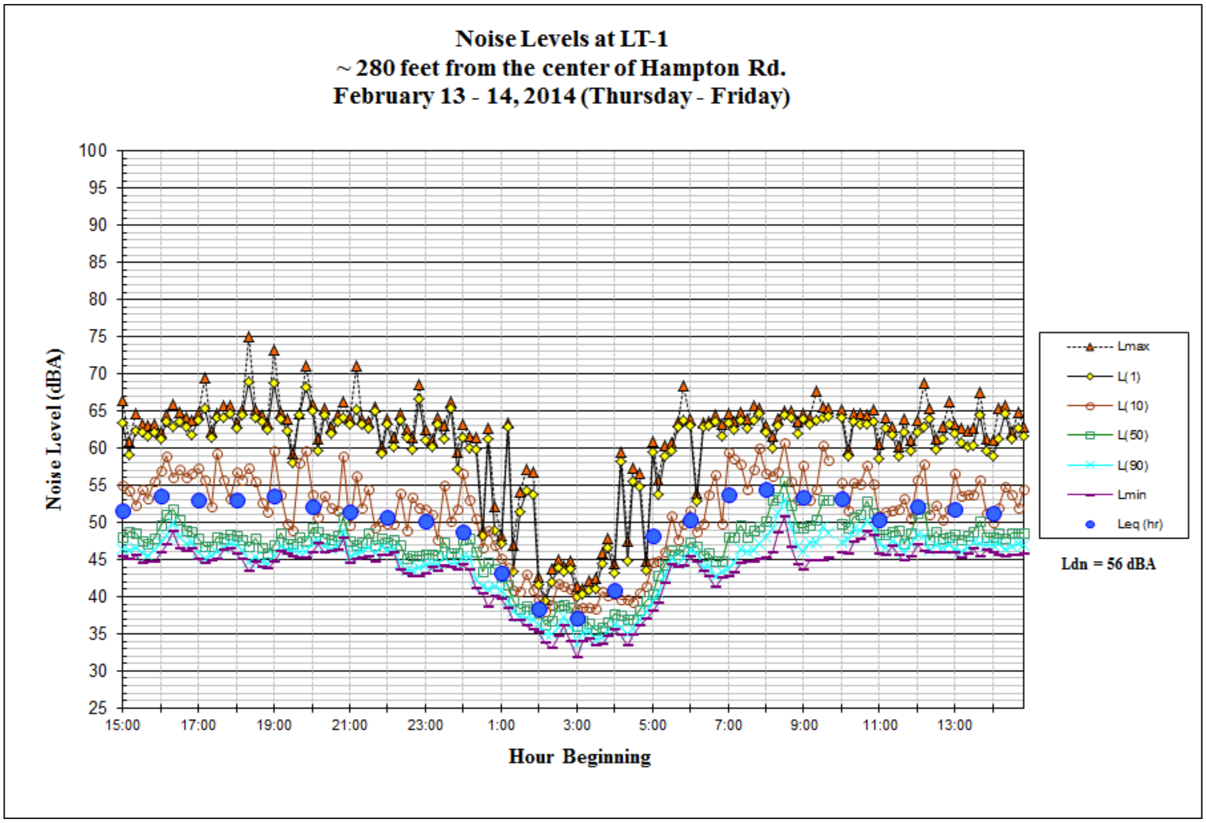
7

Appendix E

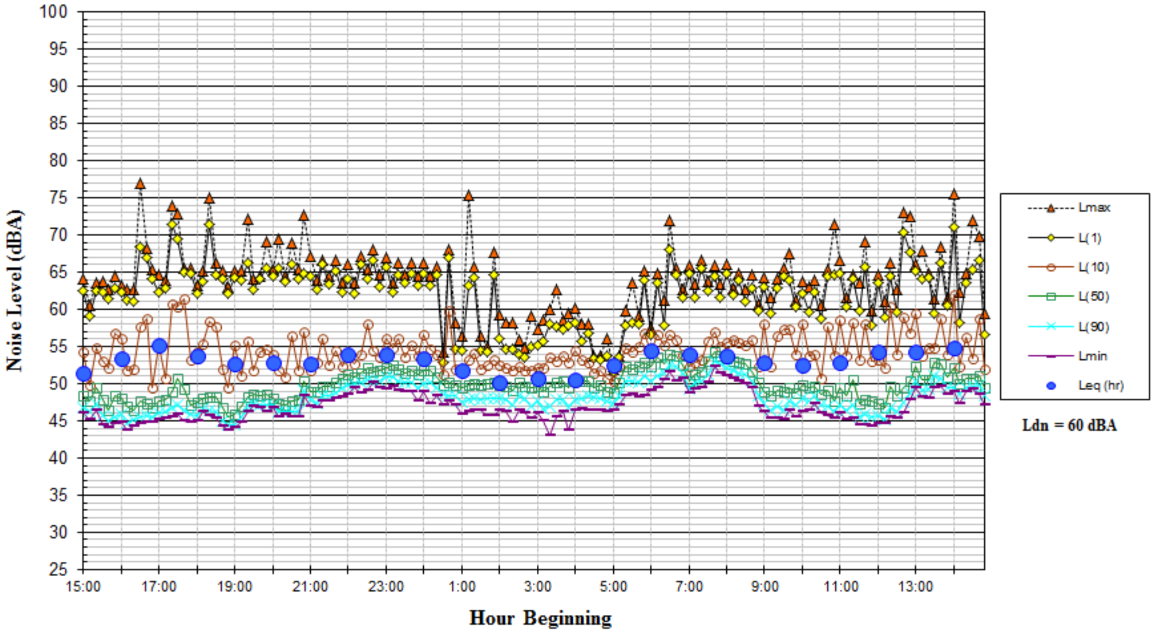
Noise Monitoring Results

Appendix


Noise Levels at LT-1
~ 280 feet from the center of Hampton Rd.
February 12 - 13, 2014 (Wednesday - Thursday)
Noise Level (dBA)
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
15:00
17:00
19:00
21:00
23:00
1:00
3:00
5:00
7:00
9:00
11:00
13:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)
Ldn = 57 dBA

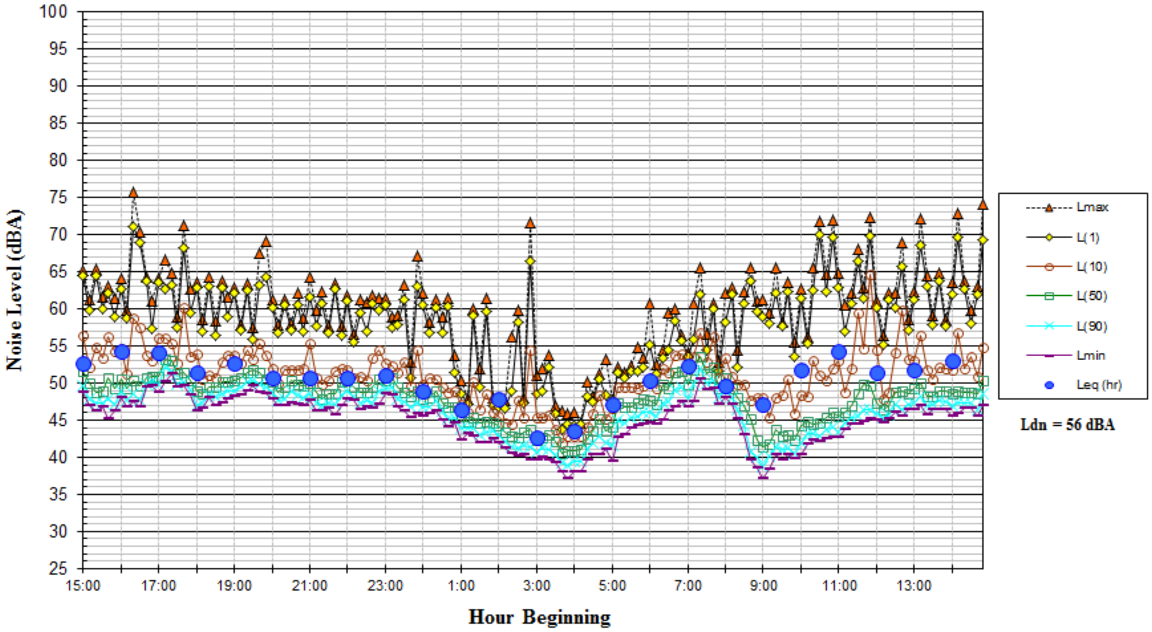

Noise Levels at LT-1
~ 280 feet from the center of Hampton Rd.
February 13 - 14, 2014 (Thursday - Friday)
Noise Level (dBA)
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
15:00
17:00
19:00
21:00
23:00
1:00
3:00
5:00
7:00
9:00
11:00
13:00
Hour Beginning
Lmax
L(1)
L(10)
L(50)
L(90)
Lmin
Leq (hr)
Ldn = 56 dBA

Noise Levels at LT-1
~ 280 feet from the center of Hampton Rd.
February 14 - 15, 2014 (Friday - Saturday)

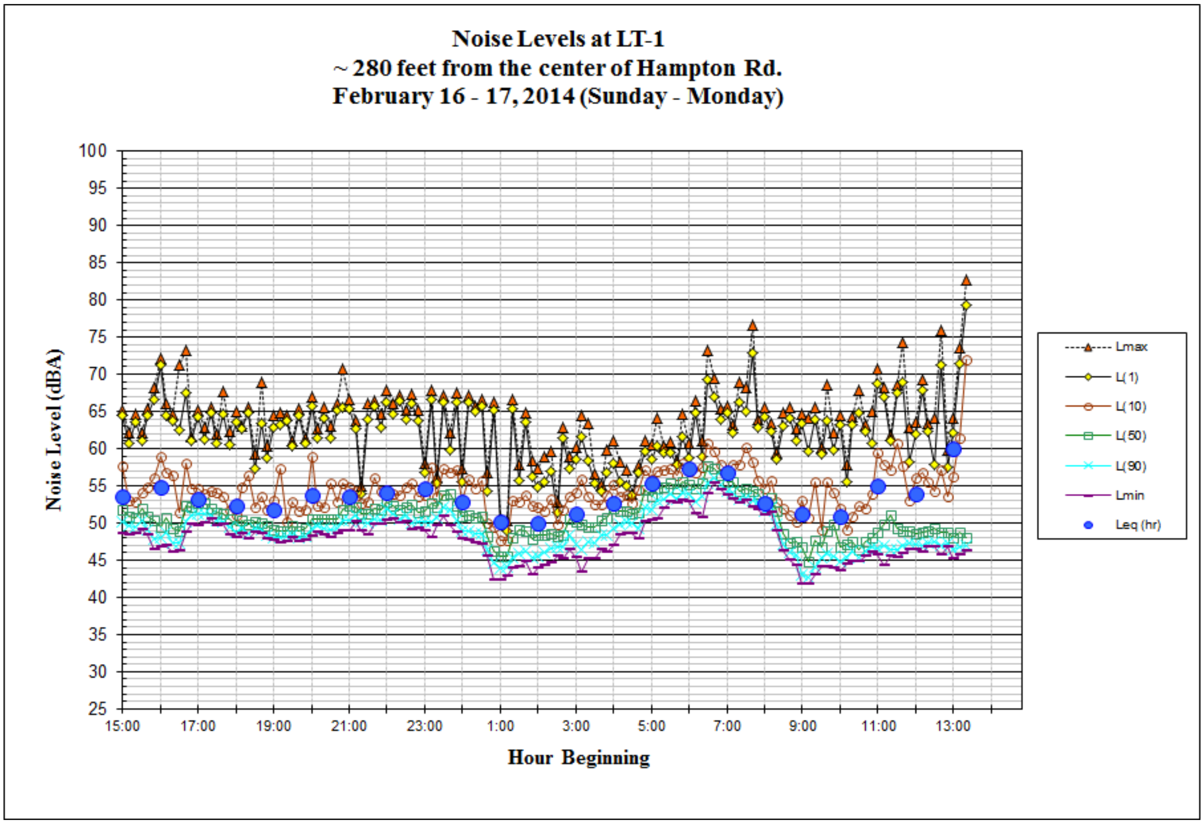


Ldn = 60 dBA

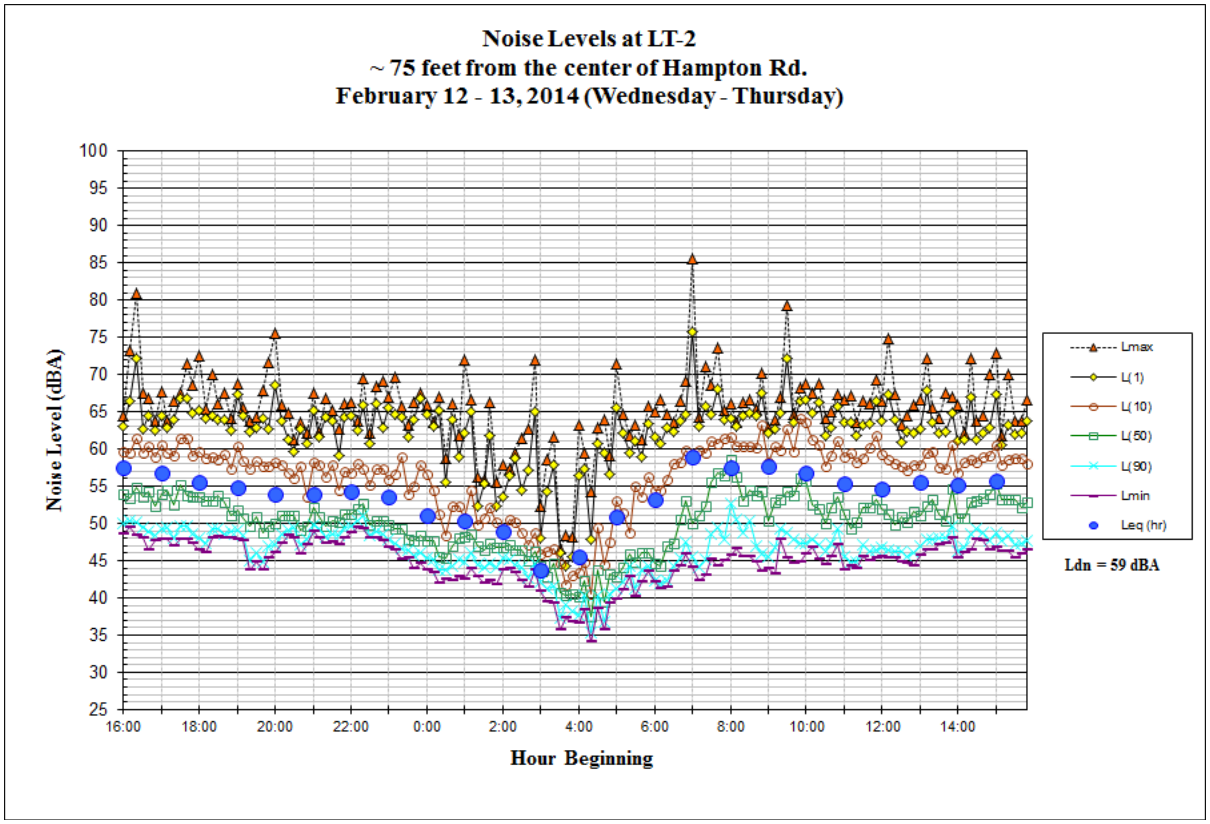
Noise Levels at LT-1
~ 280 feet from the center of Hampton Rd.
February 15 - 16, 2014 (Saturday - Sunday)



Ldn = 56 dBA



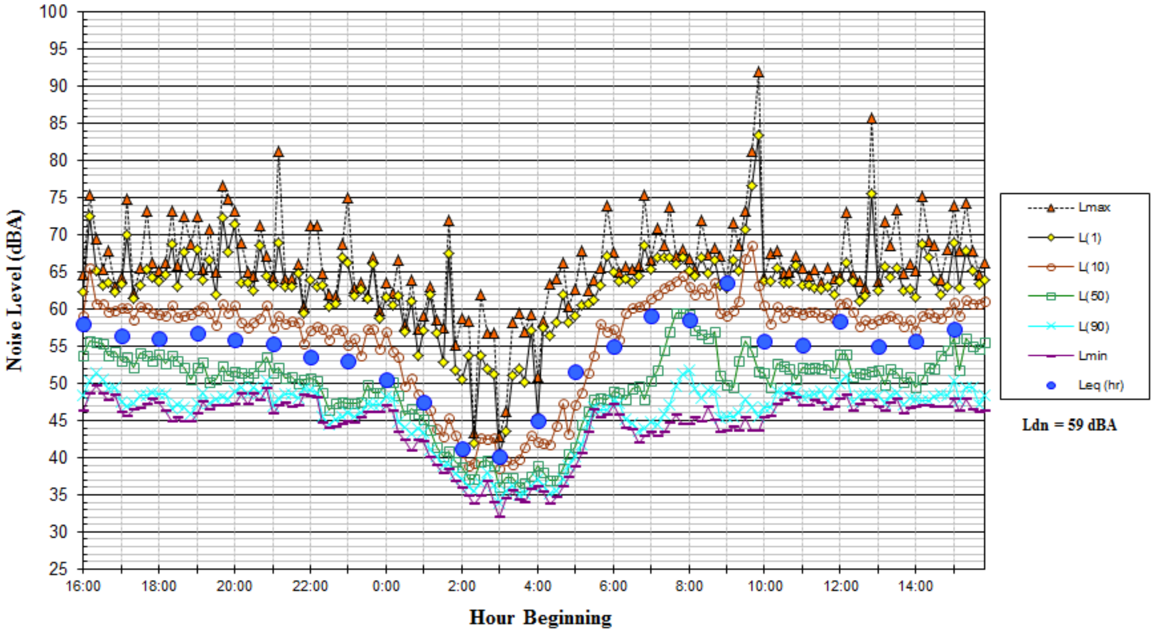
Noise Levels at LT-1
~ 280 feet from the center of Hampton Rd.
February 16 - 17, 2014 (Sunday - Monday)



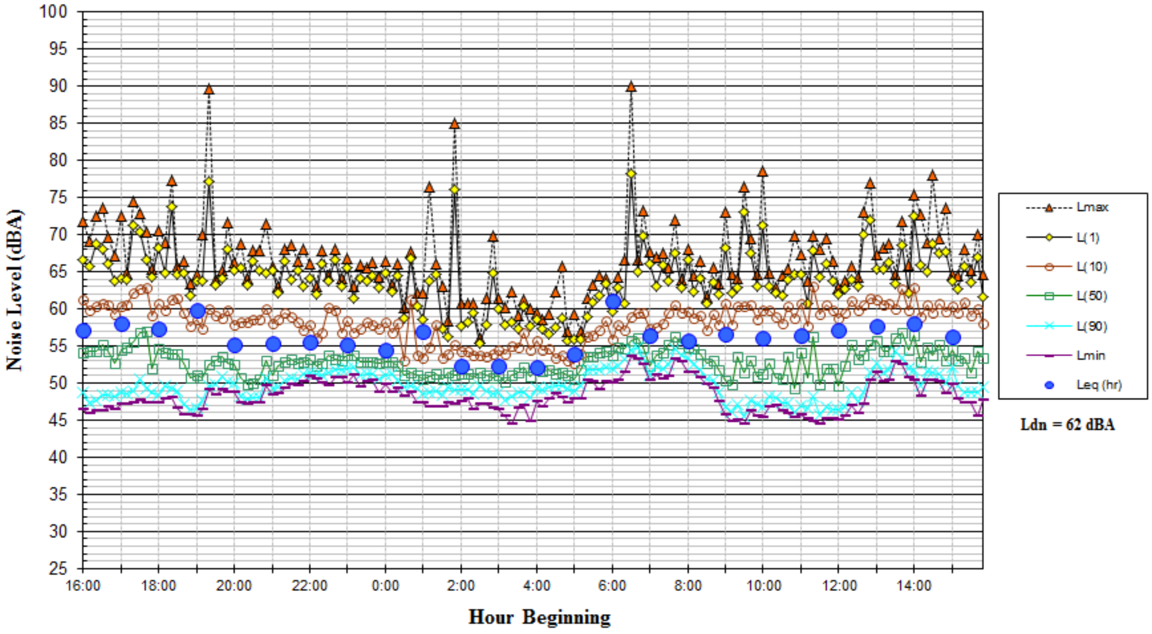
Noise Levels at LT-2
~ 75 feet from the center of Hampton Rd.
February 12 - 13, 2014 (Wednesday - Thursday)

Ldn = 59 dBA

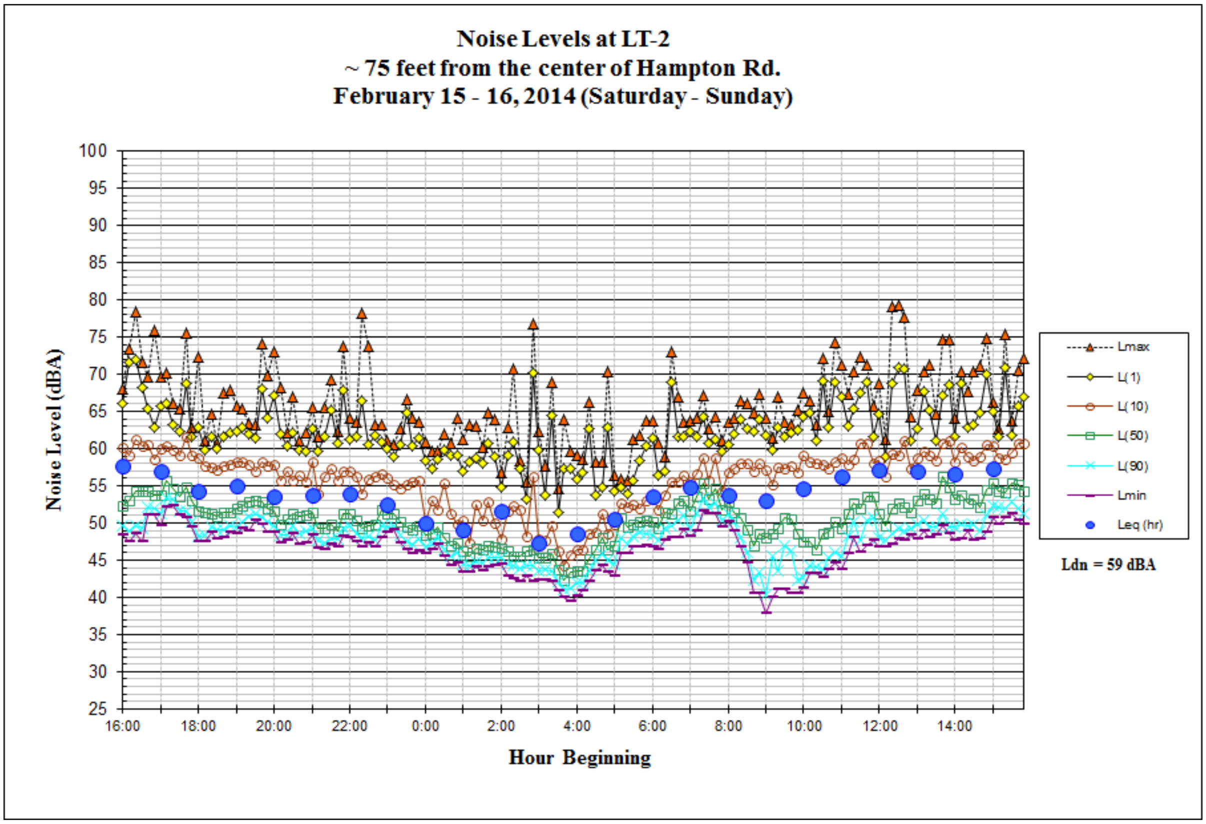
Noise Levels at LT-2
~ 75 feet from the center of Hampton Rd.
February 13 - 14, 2014 (Thursday - Friday)



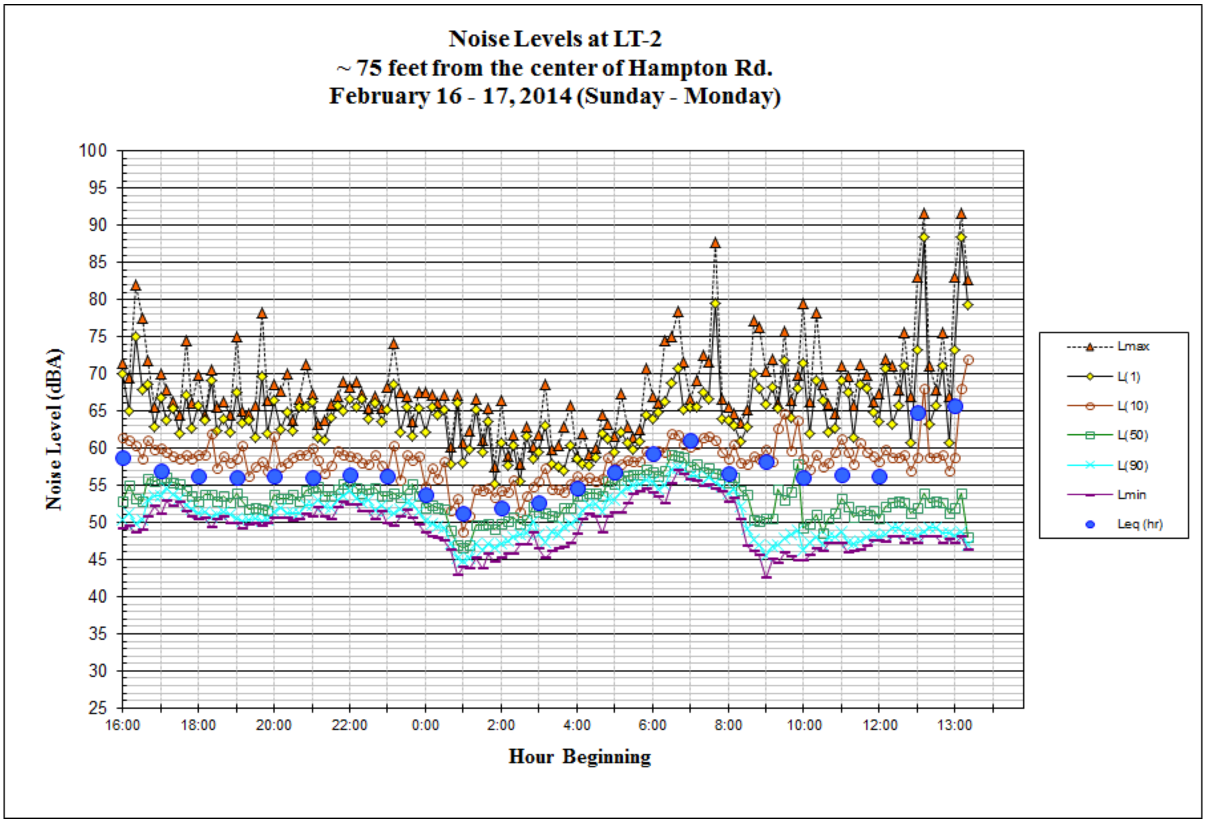
Noise Levels at LT-2
~ 75 feet from the center of Hampton Rd.
February 14 - 15, 2014 (Friday - Saturday)



Noise Levels at LT-2
~ 75 feet from the center of Hampton Rd.
February 15 - 16, 2014 (Saturday - Sunday)



Noise Levels at LT-2
~ 75 feet from the center of Hampton Rd.
February 16 - 17, 2014 (Sunday - Monday)



Appendix F

Traffic Impact Analysis

HEXAGON TRANSPORTATION CONSULTANTS, INC.

Cherryland Community Center

Draft Traffic Impact Analysis

Prepared for:

MIG, Inc.

February 3, 2014

Hexagon Transportation Consultants, Inc.
Hexagon Office: 111 W. St. John Street, Suite 850
San Jose, CA 95113
Hexagon Job Number: 14JH
Phone: 408.971.6100
Document Name: Cherryland_Community_Center_DTIA_Feb_3.doc

San Jose · Gilroy · **Pleasanton** · Phoenix

www.hextrans.com

Areawide Circulation Plans **Corridor Studies** Pavement Delineation Plans **Traffic Handling Plans** Impact Fees **Interchange Analysis** Parking **Transportation Planning** Traffic Calming **Traffic Control Plans** Traffic Simulation **Traffic Impact Analysis** Traffic Signal Design **Travel Demand Forecasting**

Table of Contents

Appendices

List of Tables

List of Figures

Executive Summary

This report presents the results of the traffic impact analysis conducted for the Cherryland Community Center. The purpose of the traffic study was to identify any traffic-related impacts that would result from the proposed community center. The project is located at 278 Hampton Road in the community of Cherryland in unincorporated Alameda County. The proposed community center involves construction of a new building and demolition of single family residence. The proposed project would generate less than 100 peak hour trips and because of this an analysis of Congestion Management Program (CMP) facilities is not required. According to the proposed site plan, the project would have a single driveway on Hampton Road.

Project Trip Estimates and Traffic Volumes

Project trips were added to the baseline traffic volumes to represent baseline (background) traffic conditions with implementation of the project. The cumulative traffic conditions associated with year 2035 were analyzed both without and with the project using the Alameda County Transportation Model. This model is maintained by the Alameda County Transportation Commission.

Project Intersection Analysis

The results of the intersection level of service analysis are summarized in Table ES-1. The results show that the two signalized study intersections would operate at acceptable levels of service under baseline (background) project conditions.

The results show that the following signalized study intersection would operate at unacceptable levels of service under Cumulative and Cumulative Project conditions:

- Mission Boulevard and Hampton Road

Mission Boulevard and Hampton Road. The average delay at the intersection of Mission Boulevard and Hampton Road under the cumulative project conditions is not forecasted to increase compared to the average delay under cumulative conditions, therefore this result does not constitute a significant impact.

Table ES- 1
Intersection Level of Service Summary

				Background						Cumulative					
		Existing		No Project		with Project				No Project		With Project			
Intersection	Peak Hour	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C	Avg Delay	LOS	Avg Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
Meekland Ave & Hampton Rd	AM	7.8	B	7.8	B	7.8	B	0.2	0.006	8.1	B	8.2	B	0.2	0.006
	PM	7.4	B	7.4	B	7.5	B	0.3	0.008	10.2	B	10.3	B	0.3	0.008
Misson Blvd & Hampton Rd	AM	16.6	C	17.0	C	17.0	C	0.0	0.003	**132.5**	**F**	**132.1**	**F**	-0.6	0.005
	PM	15.8	C	15.9	C	16.0	C	0.1	0.005	30.6	D	31.2	D	3.3	0.006

Bold indicates a substandard level of service.

Bold indicates a significant project impact.

Site Access and Site Circulation

According to the proposed site plan, the Cherryland Community Center would have vehicular access at a single driveway on Hampton Road. Overall, the site plan exhibits good on-site circulation for vehicles. Based on the site plan, the parking would be 90-degree head-in parking.

The one driveway on Hampton Road would have a throat length of approximately 20 feet. Although limited in terms of accommodating stacked cars leaving the lot, the traffic volumes on Hampton Road are relatively low. According to the site plan, the 19-space parking lot located adjacent to the building has a dead-end aisle. This means that vehicles need to turn around within the aisle if they have not located a vacant space, in order to exit the parking lot. If turnover on the site is not high, this is generally not an issue

On-Site Parking

The estimated parking supply of 80 spaces falls slightly short of the estimated 86 spaces necessary. Since there is on-street parking outside the two-block perimeter that was included in the supply estimates, the likely outcome is that some visitors of the community center may need to park 2 blocks away or more. Although there is no empirical research on the sharing of parking opportunities for the two uses (Meek Park and the proposed community center), it is possible that some users of the community center will overlap with those visiting the park. This aspect of shared parking was not assumed in the estimates, so the 86 parking spaces for the community center are potentially a conservative estimate. Also the Hayward Area Recreation District, which will coordinate activities at the proposed community center, anticipates coordinating activities between the park uses and the community center such that major activities do not overlap. This aspect will significantly improve the chances of providing sufficient available parking for the community center.

Other Transportation Issues

The proposed community center would not have a significant adverse effect on existing transit, pedestrian, or bicycle facilities in the study area.

1.
Introduction

This report presents the results of the traffic impact analysis conducted for the proposed Cherryland Community Center. The purpose of the traffic study was to identify any traffic-related impacts that would result from the proposed project. The project is located at 278 Hampton Road near the intersection of Boston Road. The project is located in the community of Cherryland in unincorporated Alameda County. The project involves construction of a new building and demolition of a residence.

According to the proposed site plan, the project would have one driveway on Hampton Road. The project site and the surrounding study area are shown on Figure 1. The proposed site plan is show on Figure 2.

Scope of Study

This study was conducted for the purpose of identifying the potential traffic impacts related to the project. The impacts of the project were evaluated following the standards and methodologies consistent with Alameda County and the City of Hayward. The following study intersections were analyzed for potential impacts:

Study Intersections

Meekland Avenue and Hampton Road

Mission Boulevard and Hampton Road

In summary, the study includes an analysis of 2 signalized intersections in the vicinity of the project site. Traffic conditions at the intersections were analyzed for the weekday AM and PM peak hours of traffic. The AM peak hour of traffic is generally between 7:00 and 9:00 AM, and the PM peak hour is typically between 4:00 and 6:00 PM. It is during these periods that the most congested traffic conditions occur on an average day.

Traffic conditions were evaluated for the following scenarios:

Scenario 1: *Existing Conditions.* Existing traffic volumes were obtained from recent traffic counts.

Scenario 2: *Near Term No Project Conditions.* Near term traffic volumes without implementation of the project were estimated by applying an annual growth rate of 1 percent to existing traffic volumes. According to Alameda County staff, there are no approved or pending projects in the study area. Thus, applying an annual growth rate of 1 percent would be acceptable for the purpose of this traffic study to account for the development of potential projects over the next two years.

LEGEND

▨ = Project Site Location

Ⓧ = Study Intersection

Figure 1
Project Location and Study Intersections

HEXAGON

NORTH
Not to Scale

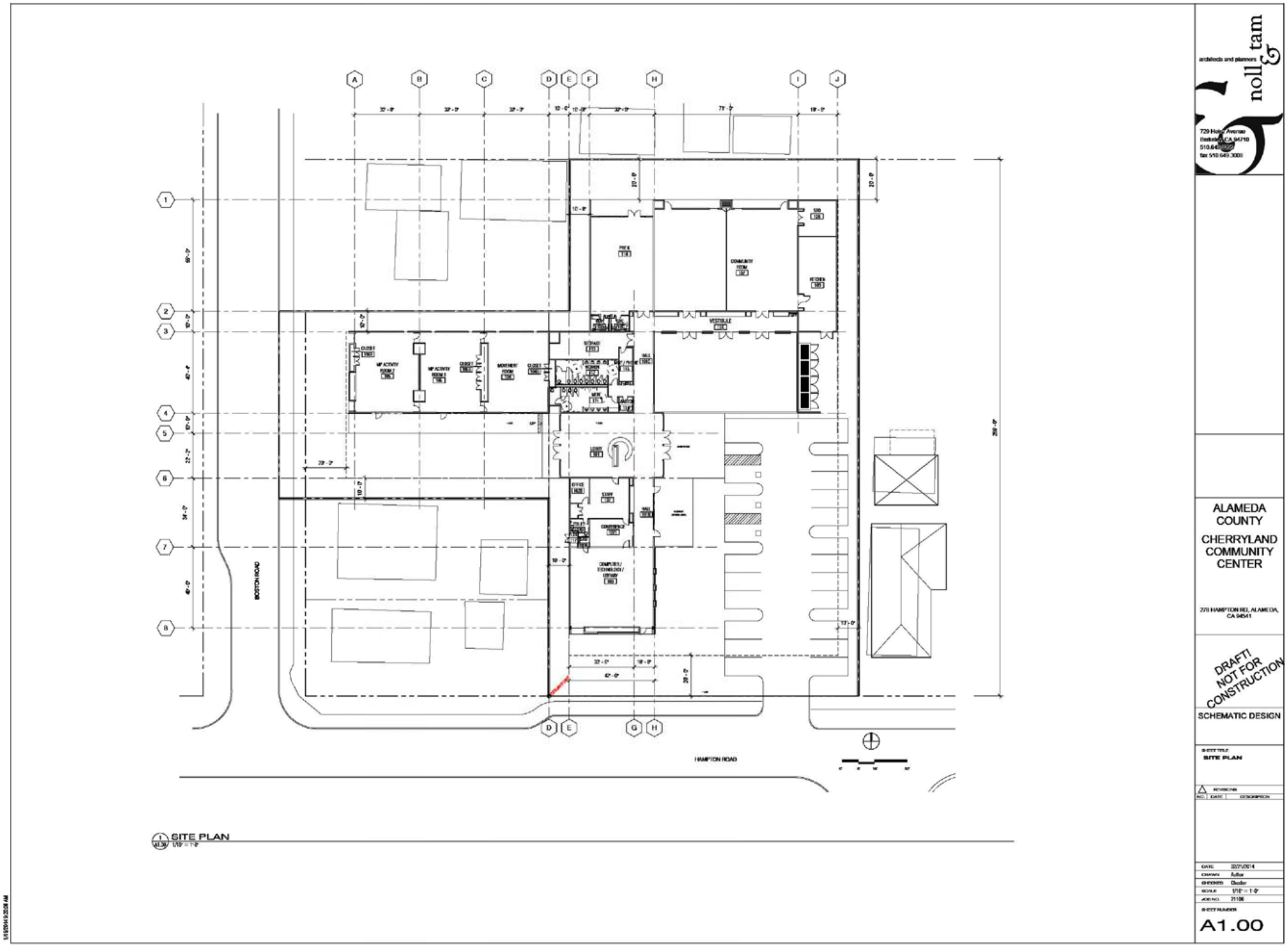


Figure 2
Site Plan

NORTH
Not to Scale

Scenario 3: *Near Term Project Conditions.* New peak hour trips generated by the project were estimated based on, *The ITE Trip Generation Manual, Ninth Edition*. The resulting project trips were added to Near Term No Project traffic volumes to represent future near term traffic conditions with implementation of the project (hereafter called *near term project traffic volumes*). The near term project traffic volumes were then assigned to the surrounding roadway network.

Scenario 4: *2035 Cumulative Conditions.* Additional trips generated by potential future developments in the project area beyond near term were estimated by using the Alameda County Transportation Model, maintained by the Alameda County Transportation Commission. The resulting 2035 cumulative project traffic volumes for the roadways were manipulated to yield 2035 cumulative project traffic volumes for the study intersections.

Methodology

This section presents the methods used to determine the traffic conditions for each scenario described above. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards.

Data Requirements

The data required for the analysis were obtained from new traffic counts, field observations, Alameda County and the Hayward Area Recreation District. The following data were collected from these sources:

- Existing traffic volumes
- Lane configurations
- Bus route data

Analysis Methodologies and Level of Service Standards

Traffic conditions at the study intersections were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The various analysis methods are described below.

Signalized Intersections

All of the signalized study intersections are located in unincorporated Alameda County and are therefore subject to the Alameda County level of service standards. For this analysis, it was assumed that the Alameda County level of service standard are consistent with those of the City of Hayward. The City of Hayward level of service standard for signalized intersections is LOS D or better. The level of service methodology used for this study is TRAFFIX, based on the *1994 Highway Capacity Manual* (HCM) operations method for signalized intersections. The 1994 HCM method evaluates signalized intersection operations on the basis of average stopped delay time for all vehicles at the intersection. Thus, the average delay and corresponding level of service reported for each signalized intersection analyzed for this traffic study are based on the average stopped delay at the intersection. The correlation between average stopped delay and level of service is shown in Table 1.

Report Organization

The remainder of this report is divided into four chapters. Chapter 2 describes existing conditions in terms of the existing roadway network, transit service, and existing bicycle and pedestrian facilities. Chapter 3 presents the intersection operations under baseline conditions without implementation of the project. Chapter 4 describes the method used to estimate project traffic and project-related impacts on the transportation system. Chapter 5 presents the conclusions of the transportation analysis.

Table 1
Signalized Intersection Level of Service Definitions

Level of Service	Description	Average Stopped Delay Per Vehicle (Sec.)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	5.0 or less
B	Operations with low delay occurring with good progression and/or short cycle lengths.	5.1 to 15.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	15.1 to 25.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	25.1 to 40.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	40.1 to 60.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	Greater than 60.0

Source: Transportation Research Board, *Highway Capacity Manual, Special Report 209, 1994* , pp 9-4, 5.

2.
Existing Conditions

This chapter describes the existing conditions for all the major transportation facilities in the vicinity of the site, including the roadway network, transit service, and bicycle and pedestrian facilities.

Existing Roadway Network

Regional access to the project site is provided via I-580 and I-238. Local access to the site is provided by Hampton Road and Meekland Avenue. These facilities are described below.

Interstate 238 (I-238) is an east/west freeway providing regional access between I-880 and I-580. I-238 is a six-lane freeway. Full interchanges are provided at I-880 and at I-580.

Hampton Road/Mattox Road is a two-lane undivided east-west minor arterial and provides direct access to the project site. There are no bike lanes on Hampton Road. Access to the project is provided via a single driveway on Hampton Road. On the east side of Mission Boulevard the street name changes to Mattox Road.

Mission Boulevard/East 14th Street is a north-south divided major arterial with two lanes in each direction. North of Hampton Road, the street name changes to East 14th Street, and extends northward into San Leandro. There are no bike lanes on Mission Boulevard in the vicinity of the project.

Meekland Avenue is a north-south undivided minor arterial with one lane of travel in each direction. Depot Road begins at Cabot Boulevard in an industrial area of Hayward, and extends eastward where it transitions into Cathy Way at its intersection with Hesperian Boulevard. Crosswalks are provided at one Community center driveway on Depot Road and at Hesperian Boulevard. There are no bike lanes on Depot Road. Access to Community center is provided via four driveways on Depot Road.

Existing Bicycle and Pedestrian Facilities

According to the Alameda County Bicycle Master Plan, there are limited existing bicycle facilities in the immediate project vicinity. There are existing bike lanes on Meekland Avenue. Class I bike lanes are proposed for Western Boulevard, which runs parallel to Mission Boulevard and is approximately two blocks east of the project. A class I bike facility is a multi-use path.

The proposed class I bike facility would greatly improve the connectivity of the currently limited network of bicycle facilities.

Pedestrian facilities in the study area consist primarily of a continuous network of sidewalks along the previously described local roadways. Crosswalks with pedestrian push buttons and signal heads are provided at the major intersections in the project area. Existing pedestrian traffic in the project area primarily is generated by visitors of Meek Park and local residents walking to and from the park, bus stops, and nearby schools on Meekland Avenue.

Existing Transit Service

Existing transit service to the study area is provided by Alameda-Contra Costa Transit District (ACTransit). The project is served by local bus lines 32, 93 and 99. The line 32 bus stops on Meekland Avenue near the intersection of Hampton Road. Line 32 provides service between BART Bayfair station and downtown Hayward and has 60-minute headways on weekends. On Mission Boulevard, ACTransit operates lines 93 and 99. Line 93 with headways of 60 minutes on weekends, provides service between the BART Bayfair station and Meekland Avenue. Line 99 provides service between BART Bayfair station and BART Fremont station, and operates with 30 minute weekend headways.

LEGEND

▨ = Project Site Location

ⓧ = Study Intersection

▪▪▪▪▪ = Bus Route 32

▪▪▪▪▪ = Bus Route 93

▪▪▪▪▪ = Bus Route 99

Figure 3
Existing Transit Service

NORTH
Not to Scale

Existing Intersection Lane Configurations

The existing lane configurations at the study intersections were collected in the field. The existing intersection lane configurations are shown on Figure 4.

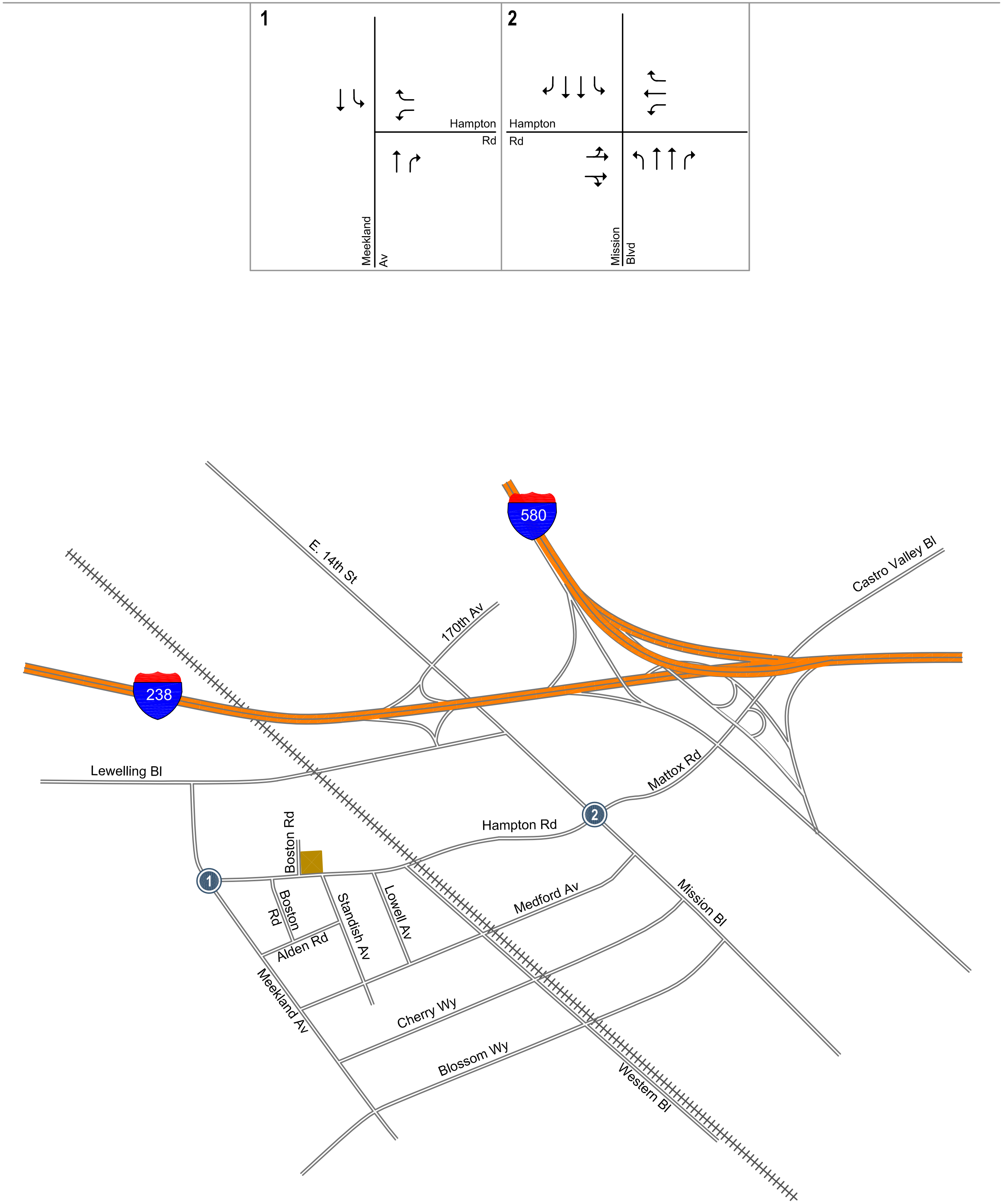
Existing Traffic Volumes

Existing AM and PM peak-hour traffic volumes were obtained from new manual turning-movement counts at the study intersections. The existing peak-hour intersection volumes are shown on Figure 5. The traffic count data are included in Appendix A.

Existing Intersection Levels of Service

The results of the intersection level of service analysis under existing conditions are summarized in Table 2. The results show that the following signalized study intersections currently operate at an unacceptable level of service:

- Meekland Avenue and Hampton Road – LOS during the AM peak hour
- Mission Boulevard and Hampton Road – LOS   during the PM peak hour



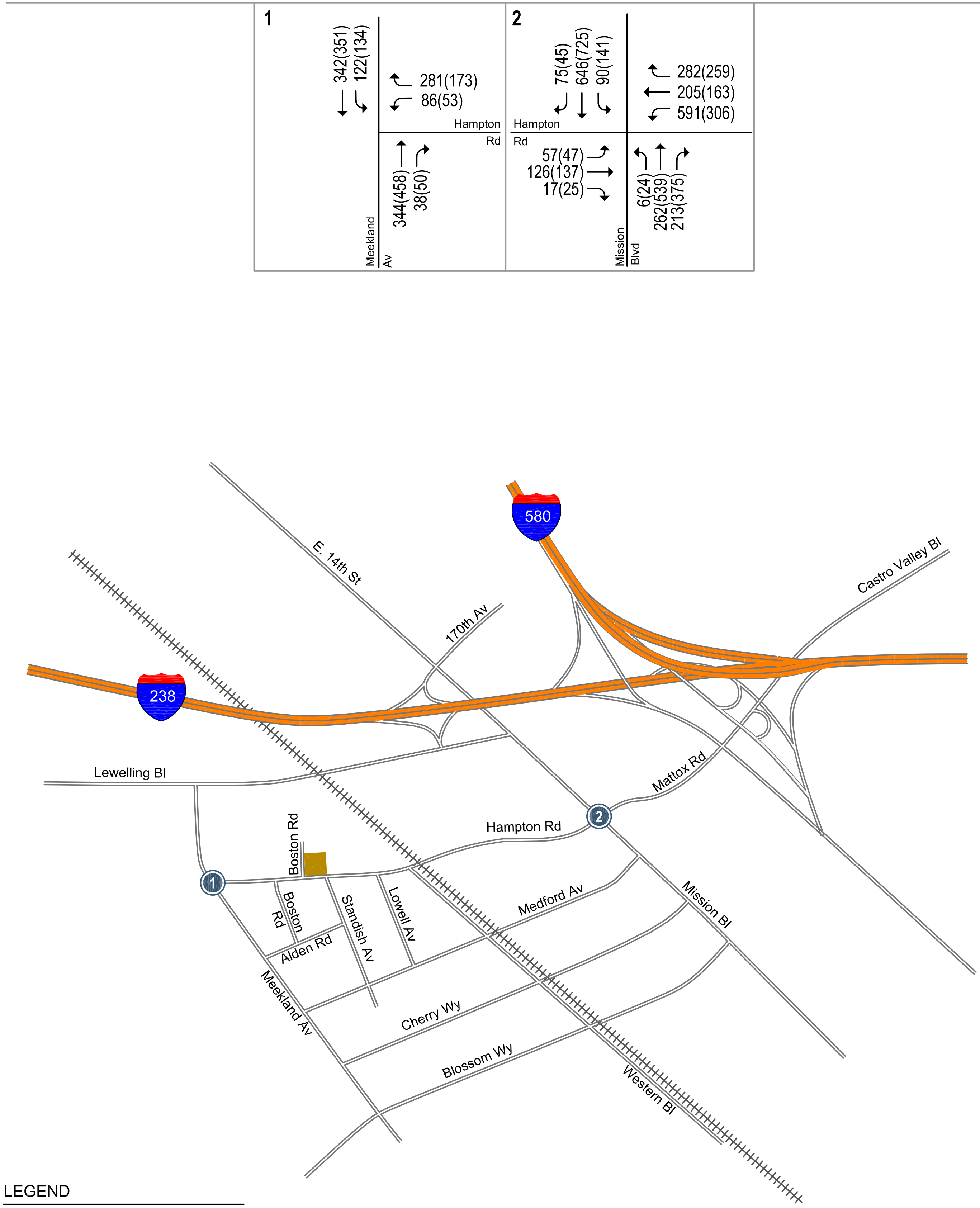
LEGEND

▨ = Project Site Location

Ⓧ = Study Intersection

Figure 4
Existing Lane Configurations

NORTH
Not to Scale



LEGEND

🟫 = Project Site Location

Ⓧ = Study Intersection

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 5
Existing Traffic Volumes

Table 2
Existing Intersection Levels of Service

Intersection	Peak Hour	Avg Delay	LOS
Meekland Ave & Hampton Rd	AM	7.8	B
	PM	7.4	B
Misson Blvd & Hampton Rd	AM	16.6	C
	PM	15.8	C

Bold indicates a substandard level of service.

Bold indicates a significant project impact.

Observed Existing Traffic Conditions

Traffic conditions were observed in the field in order to identify existing operational deficiencies and to confirm the accuracy of calculated levels of service. The purpose of this effort was (1) to identify any existing traffic problems that may not be directly related to intersection level of service, and (2) to identify any locations where the level of service calculation does not accurately reflect level of service in the field.

Overall the study intersections operated well during both the AM and PM peak hours, and the level of service analysis appears to accurately reflect actual existing traffic conditions.

3.

Baseline Conditions

This chapter describes near-term background traffic conditions without implementation of the Cherryland Community Center project, and describes the procedures used to estimate baseline or near term no project traffic volumes.

Future Roadway Network

It is assumed in this analysis that the transportation network under near term no project conditions, including roadways and intersection lane configurations, would be the same as that described under existing conditions.

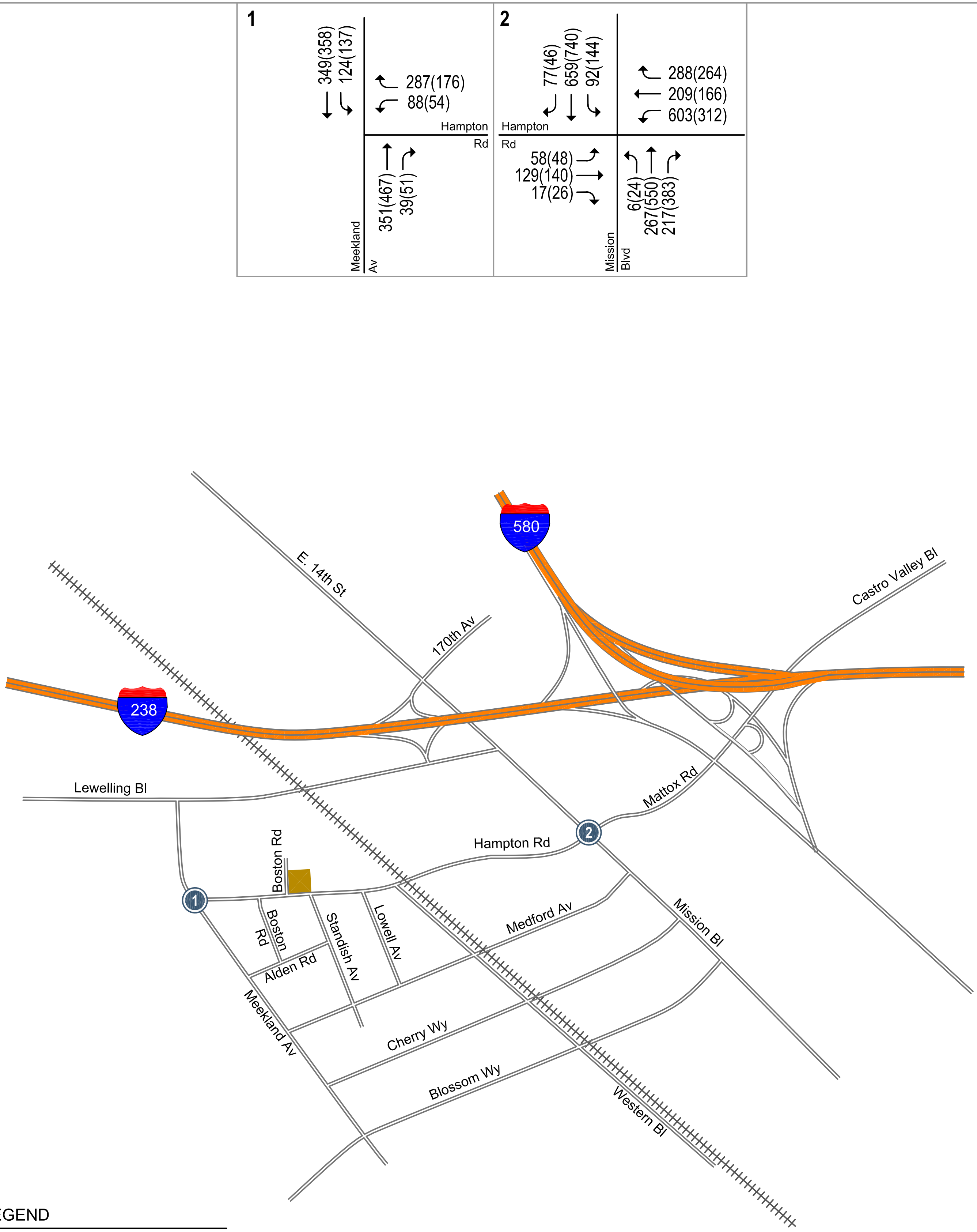
Near Term No Project Traffic Volumes

Near term traffic volumes without implementation of the project were estimated by applying an annual growth rate of 1 percent to existing traffic volumes, over a two-year period. An annual growth rate of 1 percent is commonly used to estimate traffic growth resulting from future developments. This approach to determine potential growth resulting from future developments in the project area has been used on past projects and endorsed by staff in the City of Hayward and is subject to review and approval by Alameda County staff. The approach aligns with the general concept that there are no approved projects in the study area. Thus, the 1 percent annual growth was used to account for approval of any projects in the near future. The near term no project peak hour traffic volumes are shown on Figure 9.

Near Term No Project Intersection Levels of Service

The results of the intersection level of service analysis under near term no project conditions are summarized in Table 3. The results show that the two signalized study intersections would operate at an acceptable level of service under near term no project conditions.

The level of service calculation sheets are included in Appendix B.



LEGEND

▨ = Project Site Location

ⓧ = Study Intersection

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 6
Near-Term No Project Traffic Volumes

NORTH
Not to Scale

Table 3
Intersection Levels of Service Under Background Conditions

Intersection	Peak Hour	Count Date	Existing Avg Delay	Existing LOS	Background Avg Delay	Background LOS
Meekland Ave & Hampton Rd	AM	01/00/00	7.8	B	7.8	B
	PM	01/00/00	7.4	B	7.4	B
Misson Blvd & Hampton Rd	AM	01/00/00	16.6	C	17.0	C
	PM	01/00/00	15.8	C	15.9	C

Bold indicates a substandard level of service.

Bold indicates a significant project impact.

4.

Baseline Project Conditions

This chapter describes how near term traffic conditions would be altered by implementation of the Cherryland Community Center (hereafter called *project)*. It includes a description of the method by which project traffic was estimated, as well as any impacts caused by the project. Baseline or near term project conditions were evaluated relative to near term conditions without the project in order to determine potential project impacts. The effects of the proposed project on vehicular access, on-site circulation and parking are then described. The chapter is concluded with a discussion of the effects of the project on transit, bicycle and pedestrian facilities in the project area.

Significant Impact Criteria

Significance criteria are used to establish what constitutes an impact. For this analysis, the criteria used to determine impacts on intersections are based on Alameda County Level of Service standards.

Alameda County Definition of Significant Intersection Impacts

The project is said to create a significant adverse impact on traffic conditions at a signalized intersection in unincorporated Alameda County if for either peak hour:

1. The level of service at the intersection degrades from an acceptable LOS D or better under baseline conditions to an unacceptable LOS E or F under project conditions,
2. The level of service at the intersection degrades from a LOS E under baseline conditions to an unacceptable LOS F under project conditions, or
3. The level of service at the intersection is an unacceptable LOS F under baseline conditions and the project causes the delay to increase by four (4) or more seconds.

A significant impact by Alameda County standards is said to be satisfactorily mitigated when measures are implemented that would restore intersection level of service to an acceptable LOS D or better, unless the cost of mitigating an intersection back to LOS D is prohibitive. Alameda County will ultimately make this determination.

Transportation Network Under Project Conditions

It is assumed in this analysis that the transportation network under project conditions, including roadways and intersection lane configurations, would be the same as that described under near term no project conditions.

Project Trip Estimates and Traffic Volumes

New trips generated by the Cherryland Community Center project were estimated by applying trip generation rates from the, *"ITE Trip Generation Manual", Ninth Edition*. Based on the average trip rates of community centers included in the survey, the project would generate 36 AM peak hour trips and 48 PM peak hour trips. Based on the average inbound/outbound splits that were surveyed, the project would produce 24 inbound and 12 outbound trips during the AM peak hour, and 27 inbound and 21 outbound trips during the PM peak hour. The trip generation estimates are presented below in Table 4.

Table 4
Cherryland Community Center Project Trip Generation Estimates

	AM Peak Hour				PM Peak Hour			
Square Feet (in Thousands)	Peak Hour Rate	In	Out	Total	Peak Hour Rate	In	Out	Total
17.508	2.05	24	12	36	2.74	27	21	48

Project trips were added to the Near Term No Project traffic volumes to represent Near Term Project traffic conditions with implementation of the project (hereafter called near term project traffic volumes). Figure 10 shows near term project traffic volumes at the study intersection locations.

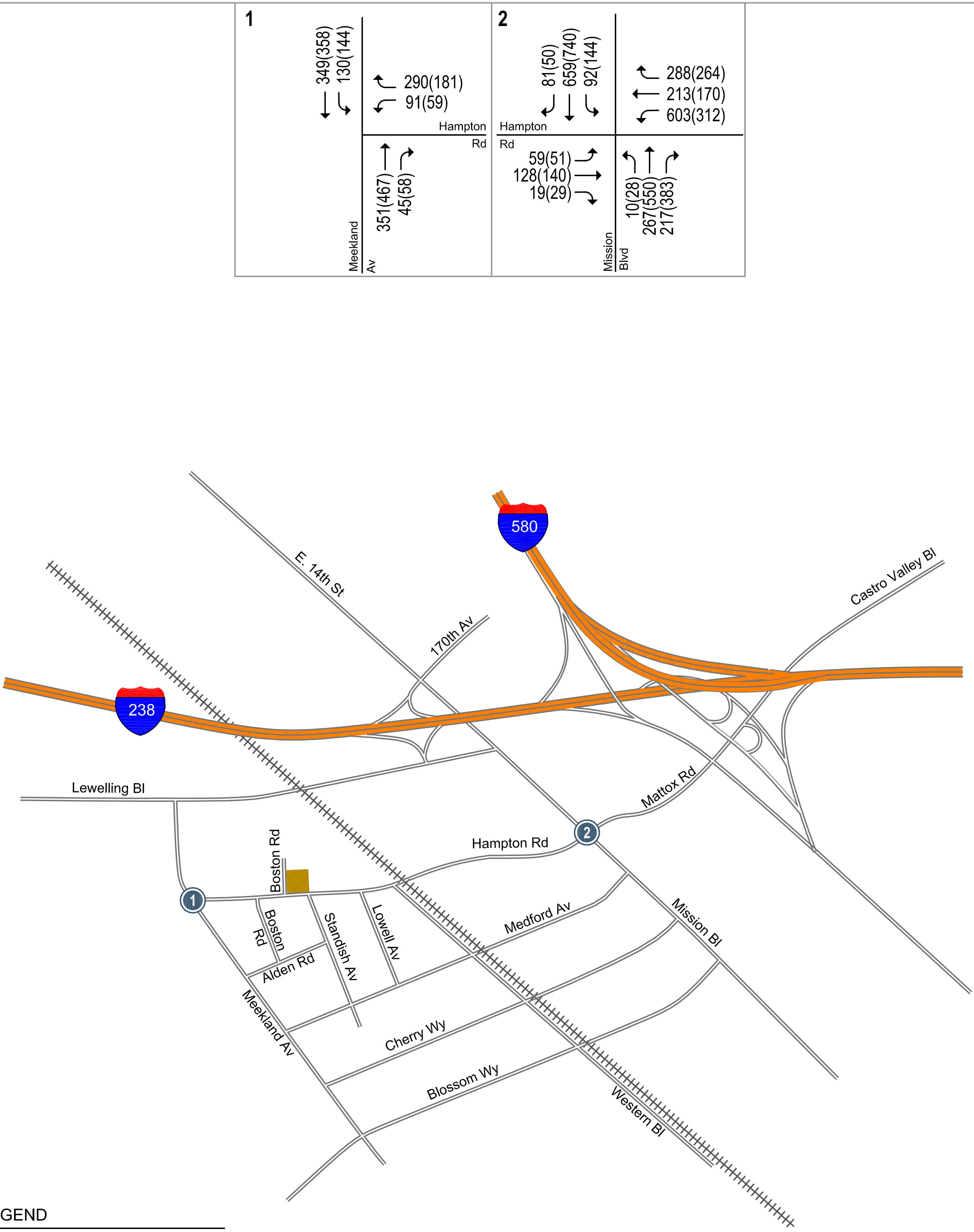
Project Intersection Analysis

The results of the intersection level of service analysis under near term project conditions are summarized in Table 5. The results show that the two signalized study intersections would operate at acceptable levels of service under near term project conditions.

Table 5
Intersection Levels of Service Under Background Project Conditions

		Background		Background + Project		
Intersection	Peak Hour	Avg Delay	LOS	Avg Delay	LOS	Incr. In Crit. Delay
Meekland Ave & Hampton Rd	AM	7.8	B	7.8	B	0.2
	PM	7.4	B	7.5	B	0.3
Misson Blvd & Hampton Rd	AM	17.0	C	17.0	C	0.0
	PM	15.9	C	16.0	C	0.1

Bold indicates a substandard level of service.
Bold indicates a significant project impact.



LEGEND

🟫 = Project Site Location

Ⓧ = Study Intersection

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 7
Near-Term with Project Traffic Volumes

NORTH
Not to Scale

Site Access and Site Circulation

According to the proposed site plan, the Cherryland Community Center would have vehicular access at a single driveway on Hampton Road. Overall, the site plan exhibits good on-site circulation for vehicles. Based on the site plan, the parking would be 90-degree head-in parking.

The one driveway on Hampton Road would have a throat length of approximately 20 feet. Although limited in terms of accommodating stacked cars leaving the lot, the traffic volumes on Hampton Road are relatively low. According to the site plan, the 19-space parking lot located adjacent to the building has a dead-end aisle. This means that vehicles need to turn around within the aisle if they have not located a vacant space, in order to exit the parking lot. If turnover on the site is not high, this is generally not an issue

On-Site Parking

The site plan shows that 19 parking spaces will be provided in a parking lot accessed from Hampton Road. In addition, as part of this project, the existing parking lot at Meek Park will be expanded to a total of 89 spaces. According to a parking space occupancy survey completed for this study in September and October of 2013, the Meek Park parking lot was approximately 63 percent at capacity on average, by approximately 4 PM on a typical weekend day. This average occupancy was based on the existing 56-space (approximate) lot for Meek Park. A detailed parking memorandum is contained in Appendix C. The proposed project includes a plan to expand the Meek Park parking lot from 56 spaces to 89 spaces. In addition, there is available on-street parking. Based on the estimate of parking demand for the community center, approximately 86 additional spaces would be required (Source: ITE Parking Generation Manual). The estimated parking supply is as follows:

- The proposed community center parking facility would provide a total of 19 parking spaces,
- A total of 33 additional spaces are proposed for the Meek Park parking lot, and
- Approximately 28 spaces on average would be available of existing parking (lot and on-street spaces).

Based on these factors the estimated parking supply is approximately 80 spaces. This proposed parking supply falls slightly short of the estimated 86 necessary. Since there is on-street parking outside the two-block perimeter that was included in these estimates, the likely outcome is that some visitors of the community center may need to park 2 blocks away or more. Although there is no empirical research on the sharing of parking opportunities for the two uses (Meek Park and the proposed community center), it is possible that some users of the community center will overlap with those visiting the park. This aspect of shared parking was not assumed in the estimates, so the 86 parking spaces for the community center are potentially a conservative estimate. Also the Hayward Area Recreation District, which will coordinate activities at the proposed community center, anticipates coordinating activities between the park uses and the community center such that major activities do not overlap. This aspect will significantly improve the chances of providing sufficient available parking for the community center.

Other Transportation Issues

Transit Facilities

The proposed community center will be served by ACTransit bus lines on Meekland Avenue and Mission Boulevard, but there are no routes serving Hampton Road. Route 32 on Meekland Avenue provides service between BART Bayfair station and downtown Hayward and has 60-minute headways on weekends. On Mission Boulevard, routes 93 and 99. Line 93 with headways of 60 minutes on weekends, provides service between the BART Bayfair station and Meekland Avenue. Line 99 provides service between BART Bayfair station and BART Fremont station, and operates with 30 minute weekend headways. New transit riders resulting from the project are not expected to be significant, in particular due to the distance of nearby transit. Thus, no improvements to the existing transit service would be necessary as a result of the project.

Pedestrian Facilities

Pedestrian traffic primarily would be generated by local residents walking to and from the proposed community center, bus stops, and Meek Park. All of the roadways in the project area currently have sidewalks on both sides of the street, with crosswalks and pedestrian push buttons and signal heads at the major intersections. The extensive network of sidewalks within the study area would continue to provide users of the community center with a safe connection between the project and other surrounding land uses in the area.

Bicycle Facilities

As described in the Existing Conditions chapter, there are very few bicycle facilities in the project area. There are no proposed bike lanes as part of this project. The project is not expected to generate a significant number of additional bicycle trips. Bicyclists will share the road with vehicular traffic. Since the proposed project would have a relatively small effect on the total bicycle trips in the study area, and forecast traffic volumes on Hampton Road are relatively low, no improvements to bicycle facilities would be necessary as a result of the project.

In summary, the proposed project would not have an adverse effect on the existing transit, pedestrian or bicycle facilities in the study area.

5.

2035 Cumulative Conditions

This chapter describes 2035 Cumulative traffic conditions with implementation of the Cherryland Community Center project, and describes the procedure used to determine 2035 Cumulative traffic volumes. It is assumed in this analysis that the transportation network under 2035 Cumulative conditions, including roadways and intersection lane configurations, would be the same as that described under Near Term Project conditions.

2035 Cumulative Traffic Volumes

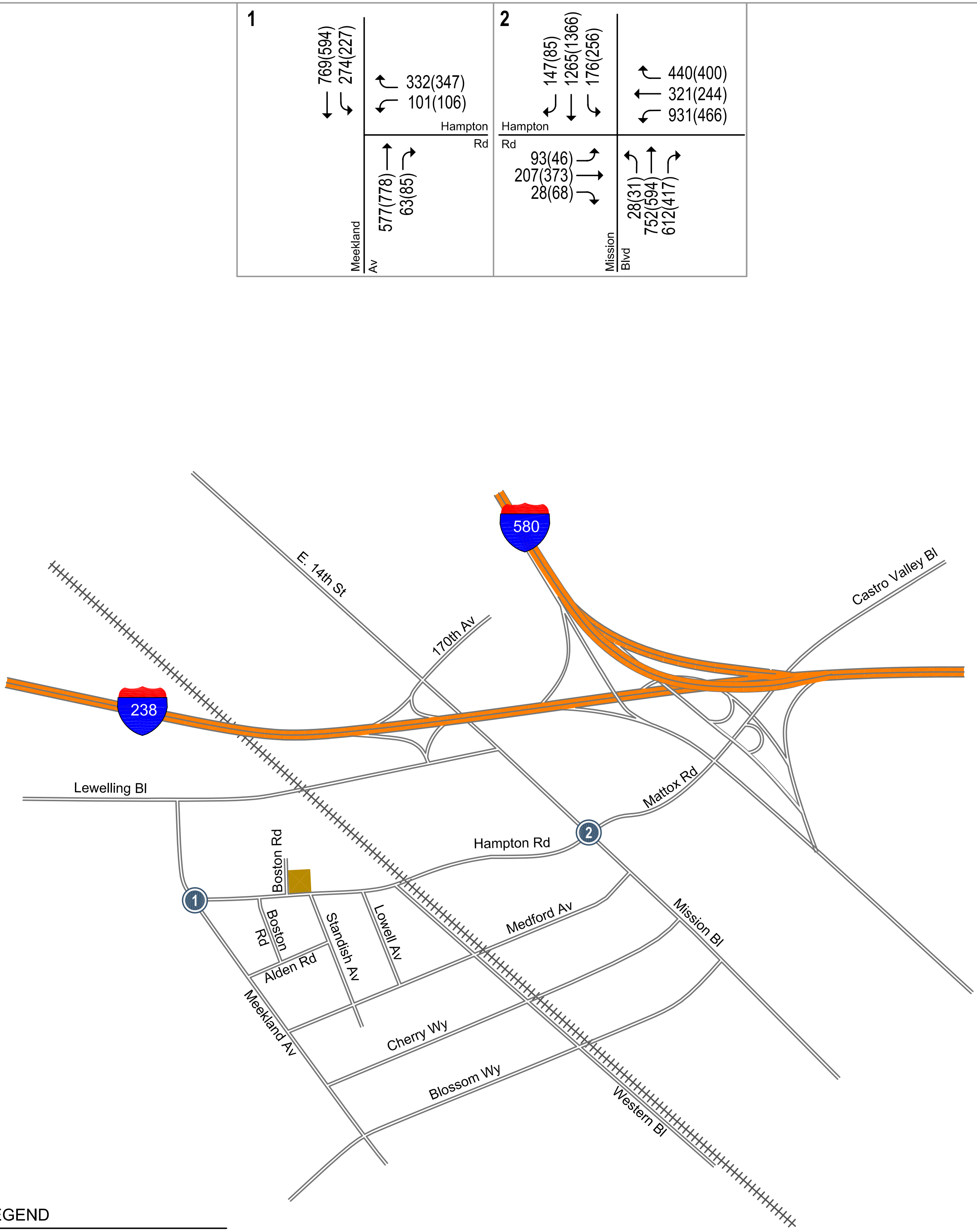
Additional trips generated by potential future developments in the project area, beyond the near term horizon, were estimated by utilizing 2035 forecast data from the Alameda County Transportation Model (ACTM). The ACTM is maintained by the Alameda County Transportation Commission (ACTC) and includes models of AM and PM peak hour traffic. Review of the input land use forecasts to the transportation model indicated that in all probability, the county's forecast assumed the community center project. Therefore, the 2035 traffic volumes for the cumulative without project scenario were estimated by subtracting the community center project trips from the 2035 forecast volumes. The resulting 2035 cumulative traffic volumes, both with and without the project were then used to generate 2035 forecast turn movements manually. 2035 cumulative project traffic volumes are shown on Figure 11.

2035 Cumulative Intersection Levels of Service

The results of the intersection level of service analysis under 2035 Cumulative conditions are summarized in Table 7. The results show that the following signalized study intersection would operate at an unacceptable level of service under 2035 Cumulative conditions:

- Mission Boulevard and Hampton Road – LOS F during the AM peak hour

Also shown in Table 6 is that average delay at the intersection of Mission Boulevard and Hampton Road does not increase with the project during the AM peak hour, therefore this intersection does not have a significant impact. The level of service calculation sheets are included in Appendix B.



LEGEND

▨ = Project Site Location

Ⓧ = Study Intersection

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 8
2035 Cumulative with Project Traffic Volumes

NORTH
Not to Scale

Table 6
Intersection Levels of Service Under 2035 Cumulative Conditions

		Cumulative					
		No Project		With Project			
Intersection	Peak Hour	Avg Delay	LOS	Avg Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
Meekland Ave & Hampton Rd	AM	8.1	B	8.2	B	0.2	0.006
	PM	10.2	B	10.3	B	0.3	0.008
Misson Blvd & Hampton Rd	AM	**132.5**	**F**	**132.1**	**F**	-0.6	0.005
	PM	30.6	D	31.2	D	3.3	0.006

Bold indicates a substandard level of service.

Bold indicates a significant project impact.

6.
Conclusions

The purpose of the traffic study was to identify any traffic-related impacts that would result from the proposed Cherryland community center. The project is located near the northeast corner of Boston Road and Hampton Road in the community of Cherryland in unincorporated Alameda County. The proposed project involves construction of one new buildings and demolition of one residence. The project would generate a relatively low volume of traffic. The project would add a driveway on Hampton Road.

Project Intersection Analysis

The results show that the two signalized study intersections would operate at acceptable levels of service under near term project conditions.

The results of the cumulative analysis show that the signalized study intersection of Mission Boulevard and Hampton Road would operate at unacceptable levels of service, both with and without the project, in the AM peak hour. Since the average delay at the intersection does not increase with the project compared to without the project, this result does not constitute a significant impact.

On-Site Parking

The estimated parking supply of 80 spaces falls slightly short of the estimated 86 spaces necessary. Since there is on-street parking outside the two-block perimeter that was included in the supply estimates, the likely outcome is that some visitors of the community center may need to park 2 blocks away or more. Although there is no empirical research on the sharing of parking opportunities for the two uses (Meek Park and the proposed community center), it is possible that some users of the community center will overlap with those visiting the park. This aspect of shared parking was not assumed in the estimates, so the 86 parking spaces for the community center are potentially a conservative estimate. Also the Hayward Area Recreation District, which will coordinate activities at the proposed community center, anticipates coordinating activities between the park uses and the community center such that major activities do not overlap. This aspect will significantly improve the chances of providing sufficient available parking for the community center.

Other Transportation Issues

The proposed community center project would not have a significant adverse effect on existing transit, pedestrian, or bicycle facilities in the study area.

Cherryland Community Center
Technical Appendices

Appendix A

Traffic Counts

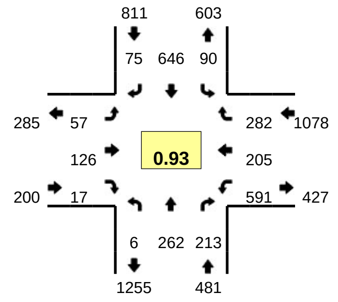
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Mission Blvd -- Hampton Rd

CITY/STATE: Cherryland, CA

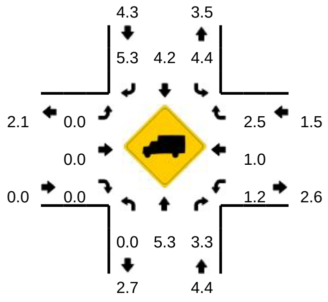
QC JOB #: 11350401

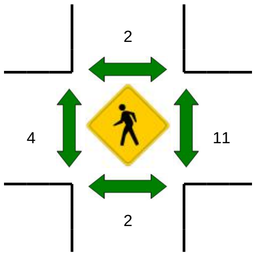
DATE: Thu, Oct 24 2013

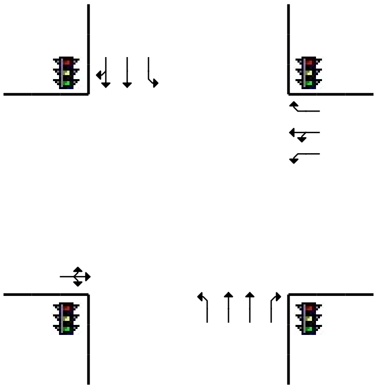


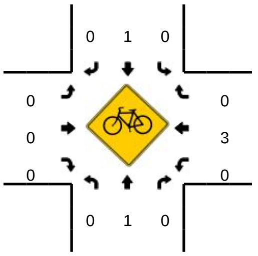
Peak-Hour: 7:25 AM -- 8:25 AM

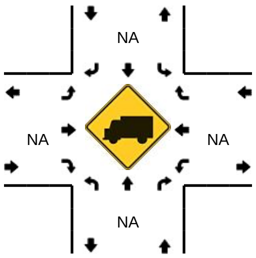
Peak 15-Min: 7:45 AM -- 8:00 AM

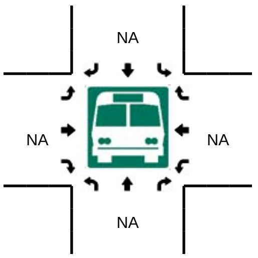












5-Min Count Period Beginning At	Mission Blvd (Northbound) Left	Thru	Right	U	Mission Blvd (Southbound) Left	Thru	Right	U	Hampton Rd (Eastbound) Left	Thru	Right	U	Hampton Rd (Westbound) Left	Thru	Right	U	Total	Hourly Totals
7:00 AM	0	8	9	1	2	67	2	0	0	8	1	0	31	6	14	0	149	
7:05 AM	0	15	14	0	5	53	0	1	2	6	0	0	37	8	15	0	156	
7:10 AM	0	13	6	0	6	54	1	0	0	3	5	0	42	11	15	0	156	
7:15 AM	0	18	16	0	3	40	0	0	7	6	1	0	36	9	21	0	157	
7:20 AM	1	21	22	0	5	57	4	0	5	4	2	0	43	17	25	0	206	
7:25 AM	1	18	14	0	10	56	2	1	2	4	0	0	39	20	25	0	192	
7:30 AM	1	10	17	0	5	63	1	0	3	5	1	0	54	18	23	0	201	
7:35 AM	0	24	15	0	8	45	2	0	3	5	1	0	52	27	22	0	204	
7:40 AM	1	24	25	0	8	62	4	0	7	7	2	0	36	19	29	0	224	
7:45 AM	0	34	23	0	6	62	9	0	2	14	1	0	41	11	25	0	228	
7:50 AM	0	21	23	0	9	54	10	0	6	20	0	0	50	16	23	0	232	
7:55 AM	1	17	20	1	6	45	15	0	7	17	1	0	69	15	19	0	233	2338
8:00 AM	0	24	18	0	3	58	9	0	5	13	1	0	48	16	24	0	219	2408
8:05 AM	0	22	18	0	13	60	8	0	5	4	1	0	44	12	23	0	210	2462
8:10 AM	0	18	14	0	4	34	3	0	8	15	3	0	56	19	18	0	192	2498
8:15 AM	0	32	14	0	12	68	4	1	3	13	1	0	36	13	25	0	222	2563
8:20 AM	1	18	12	0	4	39	8	0	6	9	5	0	66	19	26	0	213	2570
8:25 AM	1	28	14	1	7	38	3	0	6	8	3	0	43	11	16	0	179	2557
8:30 AM	0	12	14	1	11	50	1	0	4	5	1	0	42	10	24	0	175	2531
8:35 AM	1	31	16	0	9	34	3	0	5	8	0	0	48	11	30	0	196	2523
8:40 AM	1	20	15	0	6	55	3	0	1	3	1	0	41	13	18	0	177	2476
8:45 AM	1	20	16	0	4	31	1	0	7	5	3	0	63	16	25	0	192	2440
8:50 AM	0	32	14	0	10	58	3	0	0	7	0	0	52	9	18	0	203	2411
8:55 AM	1	19	18	0	4	37	6	0	5	14	1	0	35	3	35	0	178	2356

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	4	288	264	4	84	644	136	0	60	204	8	0	640	168	268	0	2772
Heavy Trucks	0	8	4		0	24	8		0	0	0		0	0	12		56
Pedestrians		4				0				0				4			8
Bicycles	0	0	0		0	0	0		0	0	0		0	2	0		2
Railroad																	
Stopped Buses																	

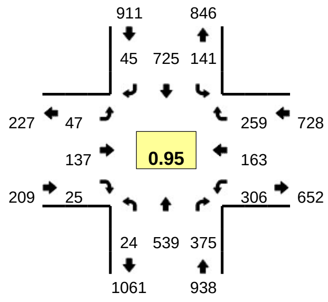
Comments:

Report generated on 10/30/2013 3:41 PM

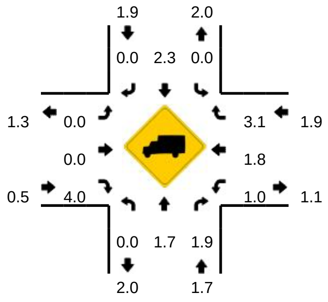
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

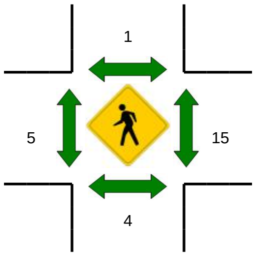
Type of peak hour being reported: Intersection Peak   Method for determining peak hour: Total Entering Volume

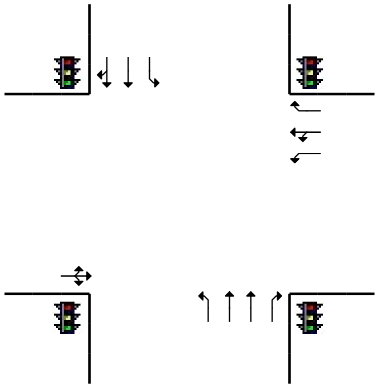
LOCATION: Mission Blvd -- Hampton Rd   **QC JOB #:** 11350402
CITY/STATE: Cherryland, CA   **DATE:** Thu, Oct 24 2013

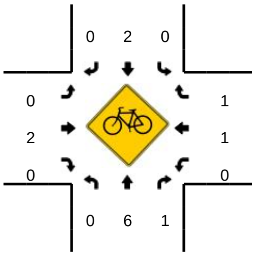


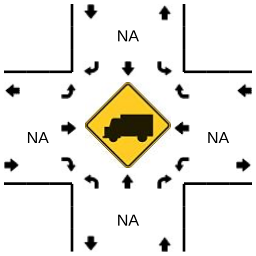
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

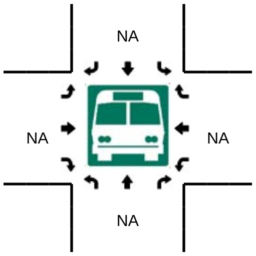












5-Min Count Period Beginning At	Mission Blvd (Northbound)				Mission Blvd (Southbound)				Hampton Rd (Eastbound)				Hampton Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	49	26	1	8	61	3	1	7	14	2	0	21	17	23	0	236	
4:05 PM	1	50	36	0	13	51	3	1	4	14	1	0	20	13	23	0	230	
4:10 PM	0	50	26	0	13	58	2	0	7	10	0	0	26	10	16	0	218	
4:15 PM	2	40	23	0	8	42	13	0	4	10	2	0	29	14	25	0	212	
4:20 PM	0	51	25	1	9	60	5	0	6	11	1	0	23	13	23	0	228	
4:25 PM	4	35	29	0	14	65	8	0	3	12	4	0	34	14	34	0	256	
4:30 PM	4	45	21	0	6	52	7	0	6	11	2	0	19	13	29	0	215	
4:35 PM	1	62	27	0	13	45	2	0	1	11	2	0	21	9	22	0	216	
4:40 PM	1	44	29	1	9	57	2	0	3	14	2	0	24	21	23	0	230	
4:45 PM	0	47	26	0	9	64	2	0	5	11	3	0	28	17	16	0	228	
4:50 PM	1	35	25	1	12	56	6	0	4	13	4	0	27	10	17	0	211	
4:55 PM	3	36	20	1	17	62	3	0	6	9	1	0	22	13	15	0	208	2688
5:00 PM	2	51	27	0	17	60	2	0	2	10	2	0	33	9	28	0	243	2695
5:05 PM	3	58	35	0	14	59	6	0	3	10	4	0	18	18	20	0	248	2713
5:10 PM	2	42	33	1	7	63	7	0	4	8	4	0	25	14	23	0	233	2728
5:15 PM	2	48	38	0	13	64	0	0	6	17	0	0	26	11	25	0	250	2766
5:20 PM	0	37	30	0	11	48	2	0	3	16	1	0	20	18	24	0	210	2748
5:25 PM	2	41	45	0	10	56	4	1	6	10	1	0	29	15	23	0	243	2735
5:30 PM	1	45	26	1	9	74	5	0	3	11	2	0	27	10	24	0	238	2758
5:35 PM	2	55	41	0	12	62	6	0	2	8	1	0	27	7	21	0	244	2786
5:40 PM	2	52	34	0	14	57	4	0	5	2	0	0	23	8	17	0	218	2774
5:45 PM	1	46	18	0	18	48	7	0	2	15	1	0	33	19	20	0	228	2774
5:50 PM	4	33	30	0	8	57	5	0	5	12	3	0	19	13	18	0	207	2770
5:55 PM	1	35	27	0	21	44	6	1	4	9	1	0	30	13	15	0	207	2769

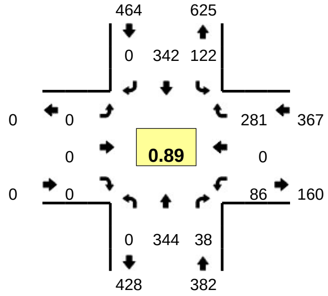
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	28	592	424	4	136	744	52	0	52	140	32	0	276	172	272	0	2924
Heavy Trucks	0	8	20		0	28	0		0	0	0		4	4	12		76
Pedestrians		4				0				4				16			24
Bicycles	0	1	0		0	0	0		0	1	0		0	0	0		2
Railroad																	
Stopped Buses																	

Comments:

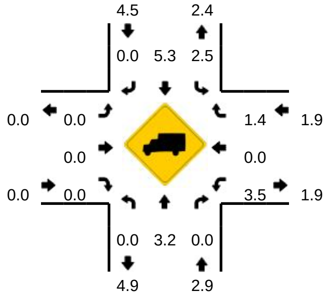
Report generated on 10/30/2013 3:41 PM   SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

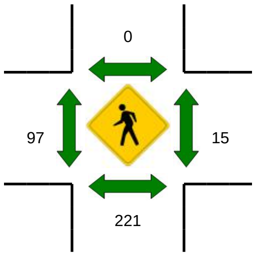
Type of peak hour being reported: Intersection Peak Method for determining peak hour: Total Entering Volume

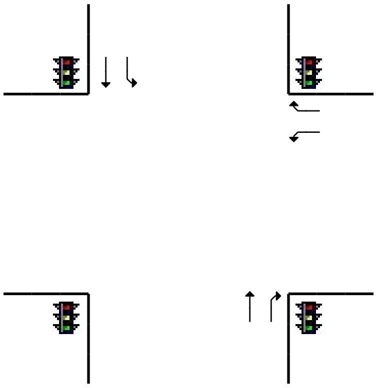
LOCATION: Meekland Ave -- Hampton Rd **QC JOB #:** 11350403
CITY/STATE: Cherryland, CA **DATE:** Thu, Oct 24 2013

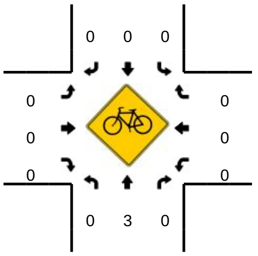


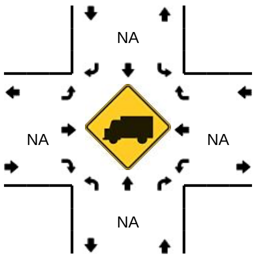
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

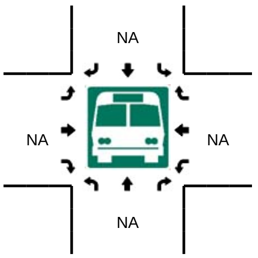












5-Min Count Period Beginning At	Meekland Ave (Northbound)				Meekland Ave (Southbound)				Hampton Rd (Eastbound)				Hampton Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	17	2	0	0	13	0	0	0	0	0	0	1	0	9	0	42	
7:05 AM	0	15	1	0	5	23	0	0	0	0	0	0	2	0	12	0	58	
7:10 AM	0	23	0	0	4	16	0	0	0	0	0	0	5	0	8	0	56	
7:15 AM	0	33	5	0	5	15	0	0	0	0	0	0	1	0	20	0	79	
7:20 AM	0	10	1	0	2	19	0	0	0	0	0	0	1	0	15	0	48	
7:25 AM	0	23	0	0	6	18	0	0	0	0	0	0	2	0	17	0	66	
7:30 AM	0	22	4	0	3	34	0	0	0	0	0	0	2	0	25	0	90	
7:35 AM	0	35	1	0	4	19	0	0	0	0	0	0	3	0	31	0	93	
7:40 AM	0	36	0	0	11	18	0	0	0	0	0	0	6	0	35	0	106	
7:45 AM	0	34	0	0	10	22	0	0	0	0	0	0	9	0	33	0	108	
7:50 AM	0	32	3	0	11	27	0	0	0	0	0	0	9	0	19	0	101	
7:55 AM	0	36	3	0	11	38	0	0	0	0	0	0	5	0	29	0	122	969
8:00 AM	0	35	5	0	9	34	0	0	0	0	0	0	16	0	18	0	117	1044
8:05 AM	0	18	4	0	9	40	0	0	0	0	0	0	9	0	17	0	97	1083
8:10 AM	0	26	9	0	12	36	0	0	0	0	0	0	7	0	20	0	110	1137
8:15 AM	0	21	6	0	18	39	0	0	0	0	0	0	5	0	22	0	111	1169
8:20 AM	0	22	2	0	15	17	0	0	0	0	0	0	10	0	13	0	79	1200
8:25 AM	0	27	1	0	9	18	0	0	0	0	0	0	5	0	19	0	79	1213
8:30 AM	0	22	2	0	4	15	0	0	0	0	0	0	0	0	16	0	59	1182
8:35 AM	0	24	1	0	5	15	0	0	0	0	0	0	1	0	8	0	54	1143
8:40 AM	0	14	0	0	8	10	0	0	0	0	0	0	4	0	7	0	43	1080
8:45 AM	0	12	1	0	2	15	0	0	0	0	0	0	3	0	13	0	46	1018
8:50 AM	0	14	4	0	10	17	0	0	0	0	0	0	3	0	16	0	64	981
8:55 AM	0	18	1	0	9	14	0	0	0	0	0	0	3	0	7	0	52	911

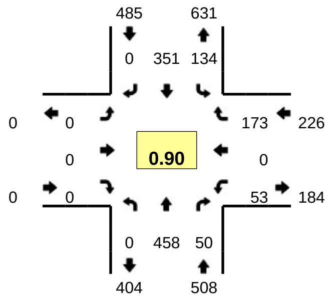
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	412	44	0	124	396	0	0	0	0	0	0	120	0	264	0	1360
Heavy Trucks	0	12	0		0	40	0		0	0	0		0	0	0		52
Pedestrians		272				0				88				36			396
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

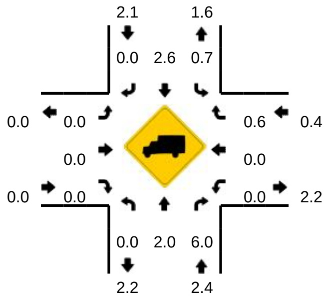
Report generated on 10/30/2013 3:41 PM SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

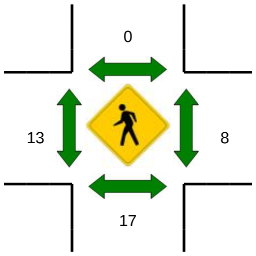
Type of peak hour being reported: Intersection Peak   Method for determining peak hour: Total Entering Volume

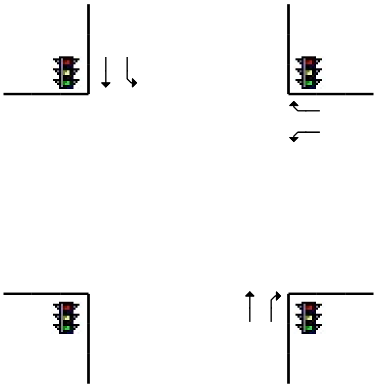
LOCATION: Meekland Ave -- Hampton Rd   **QC JOB #:** 11350404
CITY/STATE: Cherryland, CA   **DATE:** Thu, Oct 24 2013

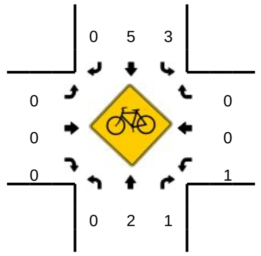


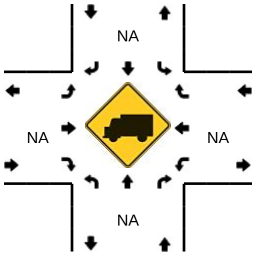
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM

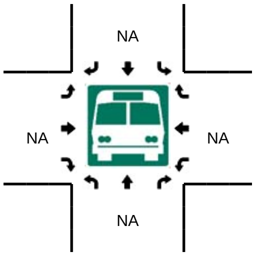












5-Min Count Period Beginning At	Meekland Ave (Northbound)				Meekland Ave (Southbound)				Hampton Rd (Eastbound)				Hampton Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	34	1	0	11	18	0	0	0	0	0	0	1	0	16	0	81	
4:05 PM	0	22	1	0	10	35	0	0	0	0	0	0	2	0	7	0	77	
4:10 PM	0	28	5	0	7	27	0	0	0	0	0	0	2	0	7	0	76	
4:15 PM	0	26	10	0	13	21	0	0	0	0	0	0	3	0	9	0	82	
4:20 PM	0	33	3	0	8	25	0	0	0	0	0	0	4	0	22	0	95	
4:25 PM	0	31	5	0	12	29	0	0	0	0	0	0	4	0	14	0	95	
4:30 PM	0	25	5	0	15	25	0	0	0	0	0	0	5	0	21	0	96	
4:35 PM	0	34	5	0	9	36	0	0	0	0	0	0	4	0	6	0	94	
4:40 PM	0	33	2	0	15	31	0	0	0	0	0	0	2	0	16	0	99	
4:45 PM	0	32	12	0	6	29	0	0	0	0	0	0	3	0	10	0	92	
4:50 PM	0	37	4	0	13	35	0	0	0	0	0	0	0	0	12	0	101	
4:55 PM	0	40	2	0	13	25	0	0	0	0	0	0	2	0	10	0	92	1080
5:00 PM	0	29	4	0	13	26	0	0	0	0	0	0	5	0	11	0	88	1087
5:05 PM	0	51	4	0	14	17	0	0	0	0	0	0	4	0	15	0	105	1115
5:10 PM	0	36	8	0	13	36	0	0	0	0	0	0	2	0	15	0	110	1149
5:15 PM	0	30	3	0	4	32	0	0	0	0	0	0	8	0	14	0	91	1158
5:20 PM	0	32	2	0	13	32	0	0	0	0	0	0	4	0	16	0	99	1162
5:25 PM	0	32	6	0	16	21	0	0	0	0	0	0	2	0	17	0	94	1161
5:30 PM	0	36	9	0	9	24	0	0	0	0	0	0	7	0	20	0	105	1170
5:35 PM	0	45	1	0	7	24	0	0	0	0	0	0	5	0	12	0	94	1170
5:40 PM	0	41	2	0	8	29	0	0	0	0	0	0	4	0	12	0	96	1167
5:45 PM	0	39	5	0	15	30	0	0	0	0	0	0	5	0	15	0	109	1184
5:50 PM	0	53	4	0	12	45	0	0	0	0	0	0	5	0	10	0	129	1212
5:55 PM	0	34	2	0	10	35	0	0	0	0	0	0	2	0	16	0	99	1219

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	504	44	0	148	440	0	0	0	0	0	0	48	0	164	0	1348
Heavy Trucks	0	16	0		0	4	0		0	0	0		0	0	0		20
Pedestrians		24				0				36				4			64
Bicycles	0	1	0		2	2	0		0	0	0		0	0	0		5
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/30/2013 3:41 PM   SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

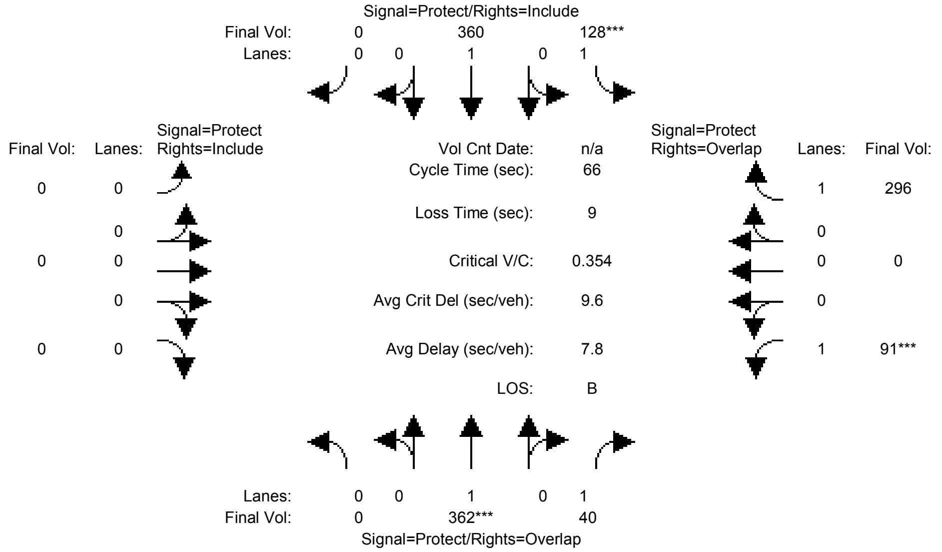
Appendix B

Level of Service Calculations

Cherryland Community Center
Cherryland, CA

Level Of Service Computation Report
1994 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #1: Meekland Ave & Hampton Rd



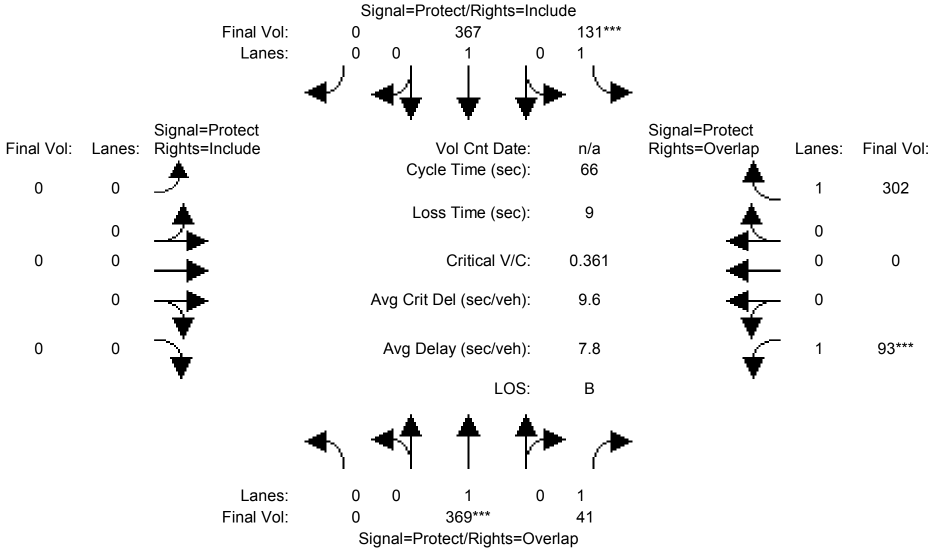
Vol Cnt Date: n/a
Cycle Time (sec): 66
Loss Time (sec): 9
Critical V/C: 0.354
Avg Crit Del (sec/veh): 9.6
Avg Delay (sec/veh): 7.8
LOS: B

```
Street Name:          Meekland Ave                      Hampton Rd
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:      7   10    10     7   10    10     0    0     0     7   10    10
Y+R:           4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        0  344    38   122  342     0     0    0     0    86    0   281
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     0  344    38   122  342     0     0    0     0    86    0   281
Added Vol:       0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:     0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:     0  344    38   122  342     0     0    0     0    86    0   281
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:      0  362    40   128  360     0     0    0     0    91    0   296
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:     0  362    40   128  360     0     0    0     0    91    0   296
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:     0  362    40   128  360     0     0    0     0    91    0   296
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:        0.00 1.00  1.00  1.00 1.00  0.00  0.00 0.00  0.00  1.00 0.00  1.00
Final Sat.:      0 1900  1900  1900 1900     0     0    0     0  1900    0  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.00 0.19  0.02  0.07 0.19  0.00  0.00 0.00  0.00  0.05 0.00  0.16
Crit Moves:        ****        ****                              ****
Green Time:    0.0 35.5  44.4  12.6 48.1   0.0   0.0  0.0   0.0   8.9  0.0  21.5
Volume/Cap:   0.00 0.35  0.03  0.35 0.26  0.00  0.00 0.00  0.00  0.35 0.00  0.48
Delay/Veh:     0.0  5.7   2.3  15.2  2.0   0.0   0.0  0.0   0.0  17.1  0.0  12.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:    0.0  5.7   2.3  15.2  2.0   0.0   0.0  0.0   0.0  17.1  0.0  12.0
DesignQueue:     0    6     0     4    4     0     0    0     0     3    0     8
Note: Queue reported is the number of cars per lane.
```

Cherryland Community Center
Cherryland, CA

Level Of Service Computation Report
1994 HCM Operations (Future Volume Alternative)
Background AM

Intersection #1: Meekland Ave & Hampton Rd



Signal=Protect/Rights=Include
Final Vol: 0 367 131***
Lanes: 0 0 1 0 1

Signal=Protect
Rights=Include
Final Vol: Lanes:
0 0
0
0 0
0
0 0

Vol Cnt Date: n/a
Cycle Time (sec): 66
Loss Time (sec): 9
Critical V/C: 0.361
Avg Crit Del (sec/veh): 9.6
Avg Delay (sec/veh): 7.8
LOS: B

Signal=Protect
Rights=Overlap
Lanes: Final Vol:
1 302
0
0 0
0
1 93***

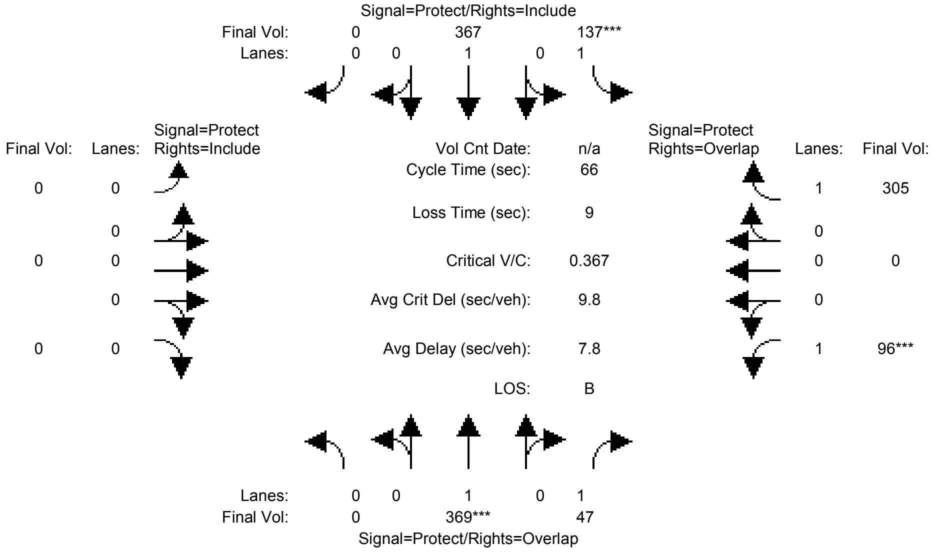
Lanes: 0 0 1 0 1
Final Vol: 0 369*** 41
Signal=Protect/Rights=Overlap

```
Street Name:           Meekland Ave                       Hampton Rd
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     7   10    10     7   10    10     0    0     0     7   10    10
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  351    39   124  349     0     0    0     0    88    0   287
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  351    39   124  349     0     0    0     0    88    0   287
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  351    39   124  349     0     0    0     0    88    0   287
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     0  369    41   131  367     0     0    0     0    93    0   302
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0  369    41   131  367     0     0    0     0    93    0   302
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0  369    41   131  367     0     0    0     0    93    0   302
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 1.00  1.00  1.00 1.00  0.00  0.00 0.00  0.00  1.00 0.00  1.00
Final Sat.:     0 1900  1900  1900 1900     0     0    0     0  1900    0  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.19  0.02  0.07 0.19  0.00  0.00 0.00  0.00  0.05 0.00  0.16
Crit Moves:       ****        ****                              ****
Green Time:   0.0 35.5  44.4  12.6 48.1   0.0   0.0  0.0   0.0   8.9  0.0  21.5
Volume/Cap:  0.00 0.36  0.03  0.36 0.27  0.00  0.00 0.00  0.00  0.36 0.00  0.49
Delay/Veh:    0.0  5.7   2.3  15.3  2.0   0.0   0.0  0.0   0.0  17.2  0.0  12.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  5.7   2.3  15.3  2.0   0.0   0.0  0.0   0.0  17.2  0.0  12.0
DesignQueue:    0    7     0     4    4     0     0    0     0     3    0     8
Note: Queue reported is the number of cars per lane.
```

Cherryland Community Center
Cherryland, CA

Level Of Service Computation Report
1994 HCM Operations (Future Volume Alternative)
Bkgrd + Project AM

Intersection #1: Meekland Ave & Hampton Rd



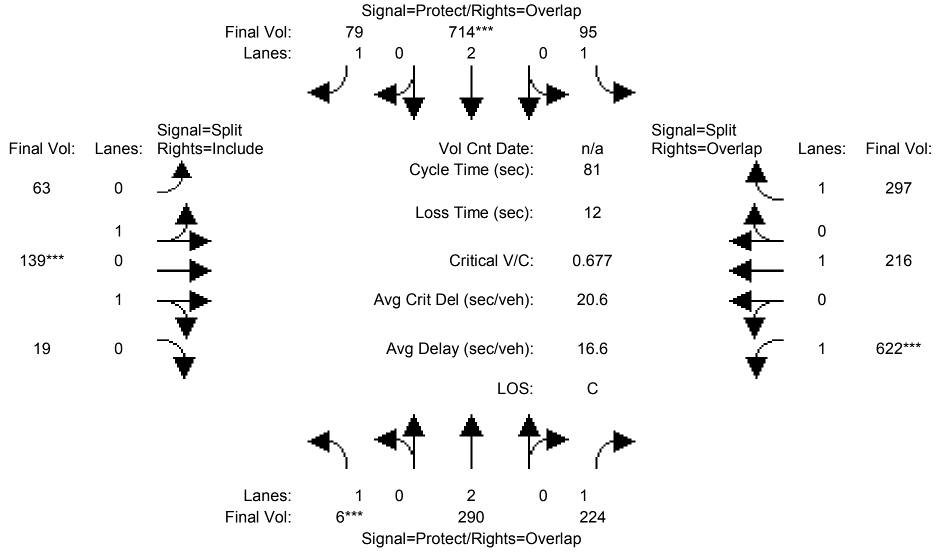
Vol Cnt Date: n/a
Cycle Time (sec): 66
Loss Time (sec): 9
Critical V/C: 0.367
Avg Crit Del (sec/veh): 9.8
Avg Delay (sec/veh): 7.8
LOS: B

```
Street Name:            Meekland Ave                        Hampton Rd
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Min. Green:     7   10    10     7   10    10     0    0     0     7   10    10
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       0  351    45   130  349     0     0    0     0    91    0   290
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  351    45   130  349     0     0    0     0    91    0   290
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  351    45   130  349     0     0    0     0    91    0   290
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     0  369    47   137  367     0     0    0     0    96    0   305
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0  369    47   137  367     0     0    0     0    96    0   305
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0  369    47   137  367     0     0    0     0    96    0   305
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 1.00  1.00  1.00 1.00  0.00  0.00 0.00  0.00  1.00 0.00  1.00
Final Sat.:     0 1900  1900  1900 1900     0     0    0     0  1900    0  1900
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.19  0.02  0.07 0.19  0.00  0.00 0.00  0.00  0.05 0.00  0.16
Crit Moves:       ****        ****                                ****
Green Time:   0.0 35.0  44.0  13.0 47.9   0.0   0.0  0.0   0.0   9.1  0.0  22.0
Volume/Cap:  0.00 0.37  0.04  0.37 0.27  0.00  0.00 0.00  0.00  0.37 0.00  0.48
Delay/Veh:    0.0  6.0   2.4  15.1  2.0   0.0   0.0  0.0   0.0  17.1  0.0  11.7
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  6.0   2.4  15.1  2.0   0.0   0.0  0.0   0.0  17.1  0.0  11.7
DesignQueue:    0    7     1     4    4     0     0    0     0     3    0     8
Note: Queue reported is the number of cars per lane.
```

Cherryland Community Center
Cherryland, CA

Level Of Service Computation Report
1994 HCM Operations (Future Volume Alternative)
Existing AM

Intersection #2: Misson Blvd & Hampton Rd



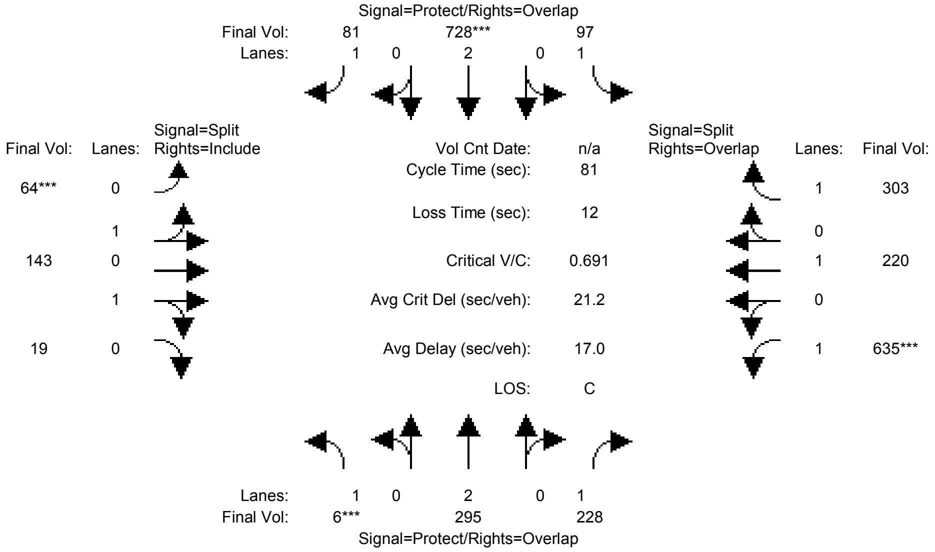
Vol Cnt Date: n/a
Cycle Time (sec): 81
Loss Time (sec): 12
Critical V/C: 0.677
Avg Crit Del (sec/veh): 20.6
Avg Delay (sec/veh): 16.6
LOS: C

```
Street Name:              Misson Blvd                         Hampton Rd
Approach:       North Bound      South Bound       East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Min. Green:     7   10    10     7   10    10    10   10    10    10   10    10
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       6  262   213    90  646    75    57  126    17   591  205   282
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    6  262   213    90  646    75    57  126    17   591  205   282
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    6  262   213    90  646    75    57  126    17   591  205   282
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     6  276   224    95  680    79    60  133    18   622  216   297
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    6  276   224    95  680    79    60  133    18   622  216   297
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.05  1.00  1.00 1.05  1.00  1.05 1.05  1.05  1.00 1.00  1.00
FinalVolume:    6  290   224    95  714    79    63  139    19   622  216   297
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  0.57 1.26  0.17  1.00 1.00  1.00
Final Sat.:  1900 3800  1900  1900 3800  1900  1083 2394   323  1900 1900  1900
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.08  0.12  0.05 0.19  0.04  0.06 0.06  0.06  0.33 0.11  0.16
Crit Moves:  ****                   ****              ****        ****
Green Time:   7.0 15.3  48.3  10.7 19.0  29.0  10.0 10.0  10.0  33.0 33.0  43.7
Volume/Cap:  0.04 0.40  0.20  0.38 0.80  0.12  0.47 0.47  0.47  0.80 0.28  0.29
Delay/Veh:   21.9 18.9   4.8  21.2 22.7  11.3  21.9 21.9  21.9  17.9 10.4   6.6
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  21.9 18.9   4.8  21.2 22.7  11.3  21.9 21.9  21.9  17.9 10.4   6.6
DesignQueue:    0    5     4     4   13     2     4    4     4    18    6     6
Note: Queue reported is the number of cars per lane.
```

Cherryland Community Center
Cherryland, CA

Level Of Service Computation Report
1994 HCM Operations (Future Volume Alternative)
Background AM

Intersection #2: Misson Blvd & Hampton Rd



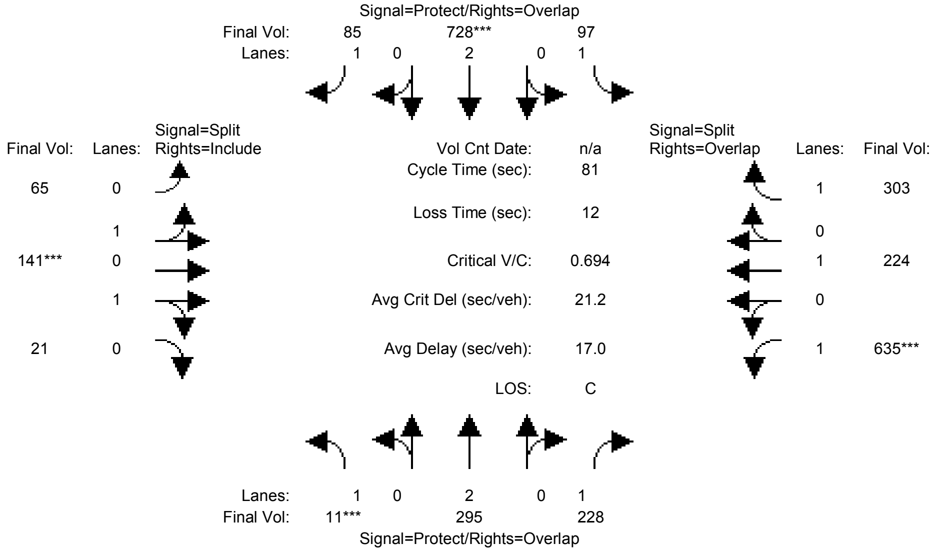
Vol Cnt Date: n/a
Cycle Time (sec): 81
Loss Time (sec): 12
Critical V/C: 0.691
Avg Crit Del (sec/veh): 21.2
Avg Delay (sec/veh): 17.0
LOS: C

```
Street Name:           Misson Blvd                       Hampton Rd
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     7   10    10     7   10    10    10   10    10    10   10    10
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       6  267   217    92  659    77    58  129    17   603  209   288
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    6  267   217    92  659    77    58  129    17   603  209   288
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    6  267   217    92  659    77    58  129    17   603  209   288
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     6  281   228    97  694    81    61  136    18   635  220   303
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    6  281   228    97  694    81    61  136    18   635  220   303
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.05  1.00  1.00 1.05  1.00  1.05 1.05  1.05  1.00 1.00  1.00
FinalVolume:    6  295   228    97  728    81    64  143    19   635  220   303
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  0.57 1.26  0.17  1.00 1.00  1.00
Final Sat.:  1900 3800  1900  1900 3800  1900  1080 2403   317  1900 1900  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.08  0.12  0.05 0.19  0.04  0.06 0.06  0.06  0.33 0.12  0.16
Crit Moves:  ****                  ****        ****              ****
Green Time:   7.0 15.3  48.3  10.7 19.0  29.0  10.0 10.0  10.0  33.0 33.0  43.7
Volume/Cap:  0.04 0.41  0.20  0.39 0.82  0.12  0.48 0.48  0.48  0.82 0.28  0.30
Delay/Veh:   21.9 18.9   4.9  21.3 23.3  11.3  22.0 22.0  22.0  18.6 10.4   6.6
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  21.9 18.9   4.9  21.3 23.3  11.3  22.0 22.0  22.0  18.6 10.4   6.6
DesignQueue:    0    6     4     4   13     2     5    5     5    19    6     7
Note: Queue reported is the number of cars per lane.
```

Cherryland Community Center
Cherryland, CA

Level Of Service Computation Report
1994 HCM Operations (Future Volume Alternative)
Bkgrd + Project AM

Intersection #2: Misson Blvd & Hampton Rd



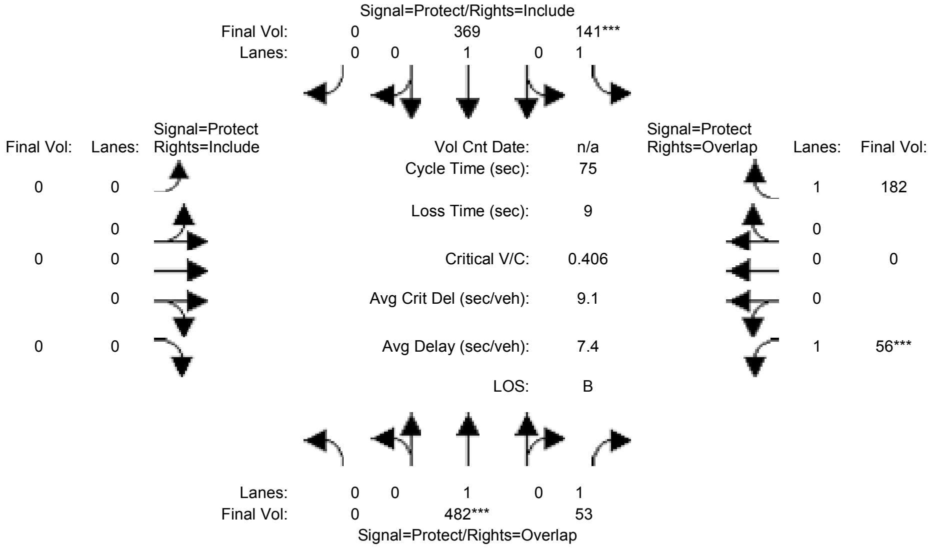
Vol Cnt Date: n/a
Cycle Time (sec): 81
Loss Time (sec): 12
Critical V/C: 0.694
Avg Crit Del (sec/veh): 21.2
Avg Delay (sec/veh): 17.0
LOS: C

```
Street Name:                 Misson Blvd                         Hampton Rd
Approach:          North Bound      South Bound      East Bound       West Bound
Movement:        L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:       7   10    10    7   10    10   10   10    10   10   10    10
Y+R:            4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        10  267   217   92  659    81   59  128    19  603  213   288
Growth Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:     10  267   217   92  659    81   59  128    19  603  213   288
Added Vol:        0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:      0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:     10  267   217   92  659    81   59  128    19  603  213   288
User Adj:      1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:       0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95 0.95 0.95  0.95
PHF Volume:      11  281   228   97  694    85   62  135    20  635  224   303
Reduct Vol:       0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:     11  281   228   97  694    85   62  135    20  635  224   303
PCE Adj:       1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:       1.00 1.05  1.00 1.00 1.05  1.00 1.05 1.05  1.05 1.00 1.00  1.00
FinalVolume:     11  295   228   97  728    85   65  141    21  635  224   303
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:      1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:         1.00 2.00  1.00 1.00 2.00  1.00 0.57 1.25  0.18 1.00 1.00  1.00
Final Sat.:    1900 3800  1900 1900 3800  1900 1088 2361   350 1900 1900  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:       0.01 0.08  0.12 0.05 0.19  0.04 0.06 0.06  0.06 0.33 0.12  0.16
Crit Moves:    ****                  ****             ****        ****
Green Time:     7.0 15.3  48.3 10.7 19.0  29.0 10.0 10.0  10.0 33.0 33.0  43.7
Volume/Cap:    0.06 0.41  0.20 0.39 0.82  0.13 0.49 0.49  0.49 0.82 0.29  0.30
Delay/Veh:     22.0 18.9   4.9 21.3 23.3  11.3 22.0 22.0  22.0 18.6 10.5   6.6
User DelAdj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:    22.0 18.9   4.9 21.3 23.3  11.3 22.0 22.0  22.0 18.6 10.5   6.6
DesignQueue:      0    6     4    4   13     2    5    5     5   19    6     7
Note: Queue reported is the number of cars per lane.
```

Cherryland Community Center
Cherryland, CA

Level Of Service Computation Report
1994 HCM Operations (Future Volume Alternative)
Existing PM

Intersection #1: Meekland Ave & Hampton Rd



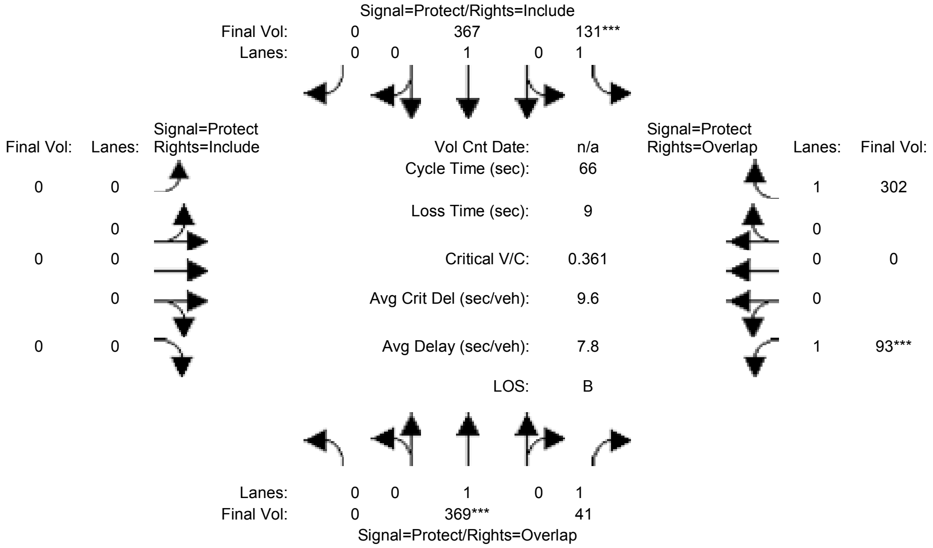
Vol Cnt Date: n/a
Cycle Time (sec): 75
Loss Time (sec): 9
Critical V/C: 0.406
Avg Crit Del (sec/veh): 9.1
Avg Delay (sec/veh): 7.4
LOS: B

```
Street Name:           Meekland Ave                       Hampton Rd
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     7   10    10     7   10    10     0    0     0     7   10    10
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  458    50   134  351     0     0    0     0    53    0   173
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  458    50   134  351     0     0    0     0    53    0   173
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  458    50   134  351     0     0    0     0    53    0   173
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     0  482    53   141  369     0     0    0     0    56    0   182
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0  482    53   141  369     0     0    0     0    56    0   182
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0  482    53   141  369     0     0    0     0    56    0   182
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 1.00  1.00  1.00 1.00  0.00  0.00 0.00  0.00  1.00 0.00  1.00
Final Sat.:     0 1900  1900  1900 1900     0     0    0     0  1900    0  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.25  0.03  0.07 0.19  0.00  0.00 0.00  0.00  0.03 0.00  0.10
Crit Moves:       ****        ****                              ****
Green Time:    0.0 45.6  52.6  13.4 59.0   0.0   0.0  0.0   0.0   7.0  0.0  20.4
Volume/Cap:  0.00 0.42  0.04  0.42 0.25  0.00  0.00 0.00  0.00  0.31 0.00  0.35
Delay/Veh:    0.0  5.1   2.2  18.2  1.4   0.0   0.0  0.0   0.0  20.9  0.0  14.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  5.1   2.2  18.2  1.4   0.0   0.0  0.0   0.0  20.9  0.0  14.4
DesignQueue:    0    8     1     5    3     0     0    0     0     2    0     6
Note: Queue reported is the number of cars per lane.
```

Cherryland Community Center
Cherryland, CA

Level Of Service Computation Report
1994 HCM Operations (Future Volume Alternative)
Background AM

Intersection #1: Meekland Ave & Hampton Rd

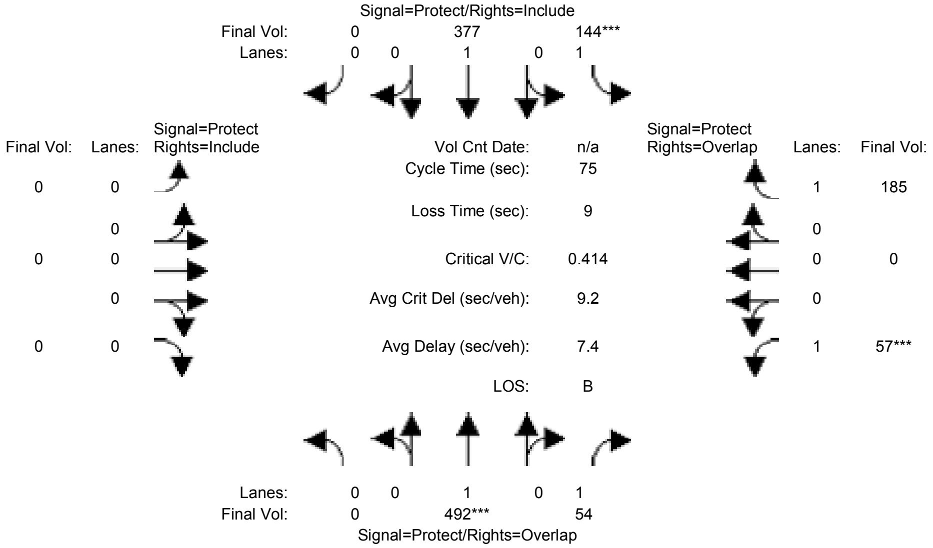


Vol Cnt Date: n/a
Cycle Time (sec): 66
Loss Time (sec): 9
Critical V/C: 0.361
Avg Crit Del (sec/veh): 9.6
Avg Delay (sec/veh): 7.8
LOS: B

```
Street Name:            Meekland Ave                      Hampton Rd
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     7   10    10     7   10    10     0    0     0     7   10    10
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  351    39   124  349     0     0    0     0    88    0   287
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  351    39   124  349     0     0    0     0    88    0   287
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  351    39   124  349     0     0    0     0    88    0   287
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     0  369    41   131  367     0     0    0     0    93    0   302
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0  369    41   131  367     0     0    0     0    93    0   302
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0  369    41   131  367     0     0    0     0    93    0   302
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 1.00  1.00  1.00 1.00  0.00  0.00 0.00  0.00  1.00 0.00  1.00
Final Sat.:     0 1900  1900  1900 1900     0     0    0     0  1900    0  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.19  0.02  0.07 0.19  0.00  0.00 0.00  0.00  0.05 0.00  0.16
Crit Moves:       ****        ****                                ****
Green Time:   0.0 35.5  44.4  12.6 48.1   0.0   0.0  0.0   0.0   8.9  0.0  21.5
Volume/Cap:  0.00 0.36  0.03  0.36 0.27  0.00  0.00 0.00  0.00  0.36 0.00  0.49
Delay/Veh:    0.0  5.7   2.3  15.3  2.0   0.0   0.0  0.0   0.0  17.2  0.0  12.0
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  5.7   2.3  15.3  2.0   0.0   0.0  0.0   0.0  17.2  0.0  12.0
DesignQueue:    0    7     0     4    4     0     0    0     0     3    0     8
Note: Queue reported is the number of cars per lane.
```

Level Of Service Computation Report
1994 HCM Operations (Future Volume Alternative)
Background PM

Intersection #1: Meekland Ave & Hampton Rd



```
Street Name:          Meekland Ave                     Hampton Rd
Approach:      North Bound     South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:     7   10    10     7   10    10     0    0     0     7   10    10
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  467    51   137  358     0     0    0     0    54    0   176
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  467    51   137  358     0     0    0     0    54    0   176
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0  467    51   137  358     0     0    0     0    54    0   176
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95  0.95 0.95  0.95
PHF Volume:     0  492    54   144  377     0     0    0     0    57    0   185
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0  492    54   144  377     0     0    0     0    57    0   185
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0  492    54   144  377     0     0    0     0    57    0   185
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 1.00  1.00  1.00 1.00  0.00  0.00 0.00  0.00  1.00 0.00  1.00
Final Sat.:     0 1900  1900  1900 1900     0     0    0     0  1900    0  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.26  0.03  0.08 0.20  0.00  0.00 0.00  0.00  0.03 0.00  0.10
Crit Moves:       ****        ****                                ****
Green Time:   0.0 45.6  52.6  13.4 59.0   0.0   0.0  0.0   0.0   7.0  0.0  20.4
Volume/Cap:  0.00 0.43  0.04  0.43 0.25  0.00  0.00 0.00  0.00  0.32 0.00  0.36
Delay/Veh:    0.0  5.2   2.2  18.2  1.4   0.0   0.0  0.0   0.0  20.9  0.0  14.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   0.0  5.2   2.2  18.2  1.4   0.0   0.0  0.0   0.0  20.9  0.0  14.4
DesignQueue:    0    9     1     5    4     0     0    0     0     2    0     6
Note: Queue reported is the number of cars per lane.
```

Appendix C

Parking Memorandum

HEXAGON TRANSPORTATION CONSULTANTS, INC.

Draft Memorandum

Date: October 21, 2013

To: Larry Wight

From: Jill Hough

Subject: Parking Demand for Proposed Cherryland Community Center

Introduction

Hexagon Transportation Consultants, Inc. has completed a parking analysis for the proposed community center in Cherryland, California (unincorporated Alameda County). This memorandum describes the parking needs associated with the proposed community center.

Project Description

The proposed project is for a community center on 17,113 square feet of land adjacent to the Meeks Estate Park in Cherryland, California. There are 23 parking spaces planned on the site, that will be accessed from Hampton Road.

Parking Demand

An estimate of the parking demand created by the proposed project was based on rates for the recreational community center land use in the Institute of Traffic Engineers' Manual on *Parking Generation*, *4th edition*. The total parking demand based on this ITE rate is presented in Table 1.

The resulting number of parking spaces needed for the proposed community center is 86 spaces. Since only 23 spaces are being planned on-site, an estimated 63 parking spaces will be needed off-site in the nearby vicinity.

The proposed project is located adjacent to the Meeks Estate park, which has a surface parking lot and some nearby on-street parking. The surface parking lot is accessed via Boston Road. The nearby on-street parking being considered is:

- On the north side of Hampton Rd, east of Boston Road,
- On the north side of Hampton Rd, west of Boston Road, and
- On Boston Road north of Hampton Rd (west side only).

The total number of available parking supply for the above locations plus the surface lot for the park was estimated at 74 spaces.

Parking demand was surveyed on one Saturday (October 5, 2013) and one Sunday (September 29, 2013) between the hours of Noon and 5 PM. The peak parking was recorded to occur on Saturday around 4 PM, with parking demand of 64 spaces. Based on this analysis, under peak conditions for Meeks Estate Park, approximately 10 spaces would be available for the proposed community center, compared with an estimated need for 63 additional parking spaces associated with the community center.

On Sunday, the peak parking demand was lower than on Saturday, with a recorded maximum parking demand of 29 spaces that occurred at approximately 4 PM and 5 PM. Based on analyzing conditions on Sunday, under peak conditions for Meeks Estate Park, approximately 45 spaces would be available for the

Estimated Parking Demand

Land Use	Size		ITE Parking Demand
Community Center [/1/]	17,113	GSF	86

Notes:

/1/ "Recreational Community Center" (495) rate from ITE Parking Generation, 4th edition.
Assumed peak period is 6 PM to 8 PM on a weekday

proposed community center, compared with an estimated need for 63 additional parking spaces associated with the community center.

Anecdotal information was obtained from the Hayward Area Recreation and Park District (HARD), regarding the schedule of events that were registered for the two survey days. On Sunday September 29, activities included a party at one of the picnic sites. On Saturday October 5, the recorded activities also included a party at one of the picnic sites. Recorded events for both days were very similar, even though the parking demand recorded on both days varied fairly significantly.

Based on the findings, the amount of parking demand for both the existing park and the proposed community center will potentially be greater than the proposed parking supply plus existing parking. The parking demand estimated for the proposed community center is 86 spaces, 23 of which will be provided on site. This leaves a gap of 63 spaces. The estimated parking supply of the parking lot and existing on-street parking is 74 parking spaces. The parking utilization associated with the park would need to be 11 spaces or less, in order for the estimated parking demand of the community center to be met. If HARD is willing to coordinate activities then it could be possible to coordinate events at both the park and at the proposed community center such that adequate parking can be provided. Other options would be to provide additional parking near the site.